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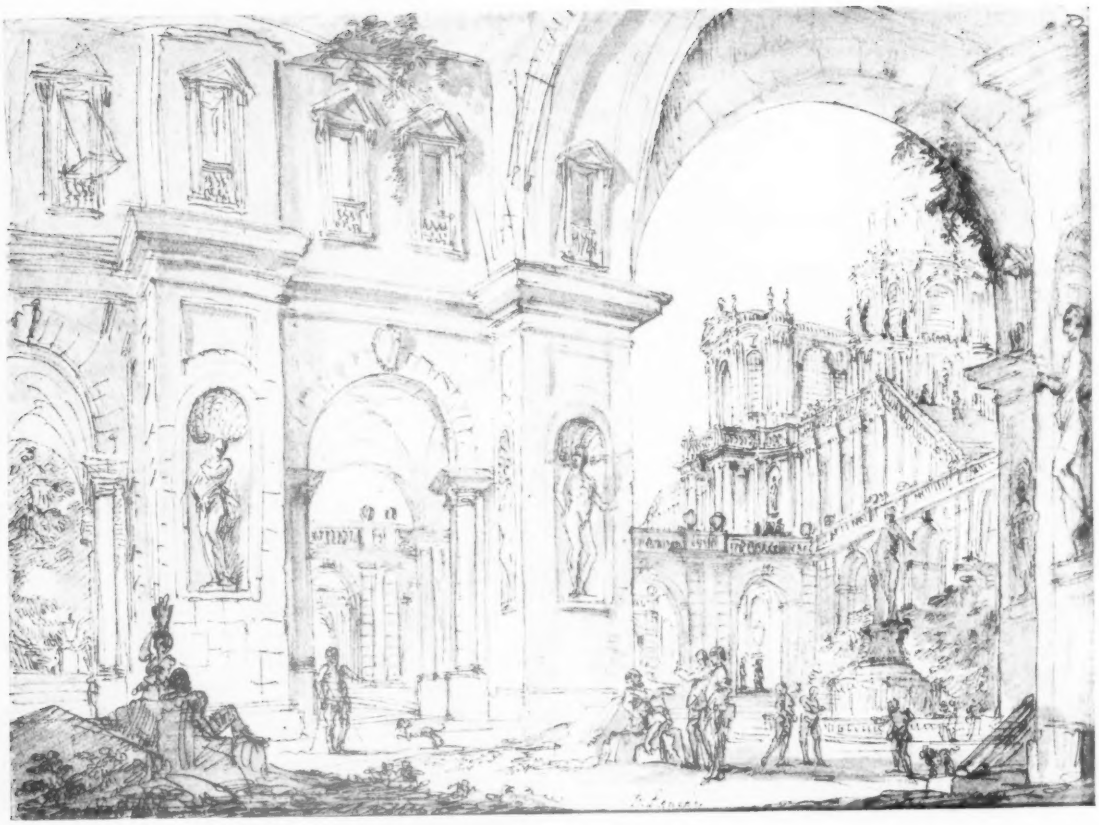

ORIGINAL DRAWING BY G. P. PANINI [1695 ?-1764]

R.I.B.A. Collection

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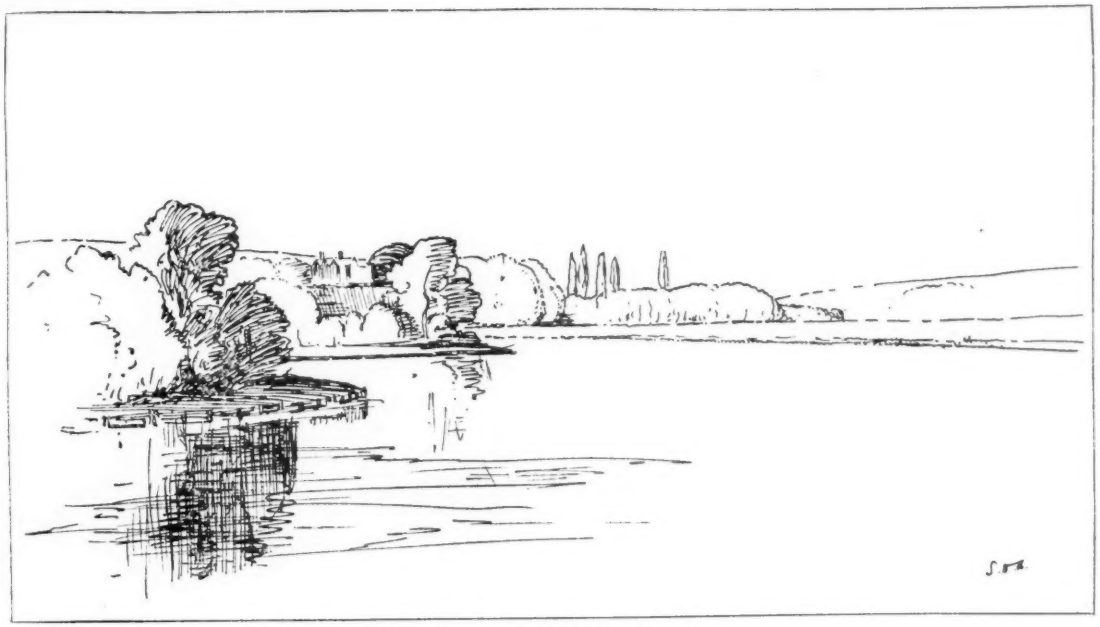


A bend in the river at Shiplake looking downstream
Sketch by Professor S. D. Adshead [*F.*]

The Thames Valley Preservation Scheme

BY PROFESSOR PATRICK ABERCROMBIE, M.A., LIVERPOOL [*F.*].

(*Read before the Royal Institute of British Architects on Monday, 17 February* 1930.)

I. AN AMENITY REPORT.

THE Council for the preservation of Rural England has always held that the necessary preliminary to all attempts to safeguard the beauties of the country—both changing and unchanging—is a careful study of the components of the area concerned—a survey, in fact, according to the wide and full meaning attached to this word. Of course, all Regional Planning schemes, promoted by local authorities, are prefaced by a preliminary survey, and nearly a quarter of the acreage of England is now covered by these official schemes; but although the Amenities—to use the frigid latinism adopted by Parliament in order not to frighten its members by the word Beauty—are necessarily considered in these reports of local authorities, they must not be too obtrusive; in fact, it is generally advisable to back up some plea for the Amenities by adducing a collateral practical advantage, as though it were necessary when commending a pretty woman to add that she is also a good child-bearer. The C.P.R.E., on the other hand, is unblushingly interested in Beauty, without any arrière pensée; though it is well aware that beauty is not unchangeable—it may be natural or it may be adorned by human artifice, it may be adolescent or it may be mature in its charms. Now, if one were asked to select a typical piece of English beauty, containing or originated by a great natural feature, but tended and cultivated by human care—moreover, one that was famed throughout the English world, a precious possession, the loss or damage to which would affright us like the ravishment of a colonial possession—what could better

be chosen than the Valley of the Thames? The Council accordingly determined that here should be set up its first branch, an offspring closely linked to the maternal headquarters in London; and its first Chairman, Lord Astor, an inhabitant of the Valley, at once set about the preparation of a survey of its course from Cricklade to Staines. The mere recital of the names of some of the places upon this stretch of 100 miles of river is enough to remind everyone of the importance of this step and to recall to English ears the scenery passed and history evoked: Cricklade, Lechlade, Kelmscott, Stanton Harcourt, Bablock Hythe, Wytham, Godstow, Oxford, Nuneham, Abingdon, Sutton Courtenay, Dorchester, Wallingford, Goring, Streatley, Pangbourne, Caversham, Reading, Henley, Medmenham, Marlow, Maidenhead, Taplow, Bray, Windsor, Eton, Runnymede, Staines. Seven counties are traversed—Gloucester, Wiltshire, Oxfordshire, Berkshire, Surrey and Middlesex; and three ranges of hill country are touched—the Cotswolds, the Berkshire Downs and the Chilterns—oolite limestone and chalk, geological strata formative of most typically English landscape.

II. Change or Stability in the Thames Valley.

No survey should be undertaken without an active object in view; we may dimly surmise what we want and use the survey to corroborate, or we may be in the dark and seek illumination. More often we have a fair idea of the main object, but we are not sure whether subsidiary ones are unwarrantable intrusions or useful adjuncts, or perchance contrary currents which yet may be rendered innocuous. We know, for example, before we study Brighton or Blackpool that they live on holiday visitors; but we are not so sure how factories would affect their prosperity—perhaps the Brightonian stockbroker would gape with interest at the unfamiliar spectacle of a mill, whereas the Blackpool tripper would be disgusted at a reminder of what he sought to escape. Is Change or Stability the chief desideratum of the Thames Valley? and does the resolving of the dilemma concern the inhabitants themselves or the world at large—is it a local or a national affair?

It would seem to be demonstrable that the Thames Valley scenery has arrived at a certain pitch of beauty from which most changes would cause a decline. There could not be a more fortunate occurrence than the stabilisation of its present condition, accompanied by, of course, a few correctives. This is without doubt the attitude of the world at large. Most people would like the river preserved, as it were, in a glass bottle in spirits of wine—a sort of museum specimen. But museum specimens, however interesting or beautiful originally, are inclined to lose their freshness—even to become wearisome with the arresting of organic growth; and this is the last state which we could wish for the Thames. No, stabilisation of its present state, not fossilisation or ossification, is to be aimed at, together with provision for growth along certain defined lines; these two conditions are not contradictory, largely because in an area of this size there is room for both. And even the use to which the general public puts the present riverside beauty requires constant though, so far as possible, unobserved adaptation for modern needs. The towpath, for example; strictly this is a right of way exclusively for the purpose of towing a barge, but there are not many barges towed along the Thames nowadays, and yet the towpath is the pedestrian's best means of enjoying the river out of reach of the motor-car. The lugging boat horse has given way to the lounging human being. Here is change which is desirable, but it needs legal sanction.

III. Analysis of the Geographic Unit of the Thames Valley.

A closer analysis of this geographic unit of the Thames Valley reveals a different state of sophistication above Oxford and below. Above, the stripling Thames is largely a primitive stream, and what changes have occurred are the unconscious results of utilitarian needs; the bridges and the divisions of farm lands. There are no riverside roads, and the flat floodlands on both sides have kept most building away; if there has been change, in the way of forest clearing from primeval times, there has been little of any sort since mediæval. I hope I shall not be misunderstood if I suggest that this Upper Thames with its fritillary meadows owes its charm chiefly to its remoteness and silence. It has no romantic features—scarce an overhanging bank or woodland—compared with the early course of any western river, Mersey, Dee, Wye or Severn, its course is quiet and uneventful. Tame, a crude Northerner might call this upper Thames. This very negative quality, however, is most precious in

the early life of the London River; but it is a quality that can most easily be daunted, it can stand no rude assaults. Fortunately, the worst buffet it has had (and from a Government-aided fist) the brutal Beet factory at Eynsham, is countered by the 500 feet of Wytham Hill, the only dramatic feature of the upper Thames, and now held in safe hands.

Below Oxford Nature and Man have together produced a very different scene: it is a terrain of constantly varied form—from Boar's Hill, the steeps of Nuneham, the Wittenham Clumps, the Goring gap, the endlessly changing swaying lines of the Chilterns, English chalk country at its best, with their climax at Cliveden, to their last outpost, the mound on which Windsor stands. It is not only thus naturally mouvementé, but it is a highly sophisticated and consciously wrought landscape. The natural scene is everywhere dominated by human handiwork, towns and churches, bridges, woods, parks, mansions, college chapels and Royal Castle. A foreign visitor, who had heard of Capability Brown and seen his work at Blenheim might be forgiven if he thought that a greater than he had taken the Thames in hand and produced a work of picturesque landscape art, compared with which the Park of Versailles is a small scale effort of formal design—so homogeneous is the scene, based on the English tradition of Heightening Nature, as compared with the French dragooning School of Canal and Avenue.

IV. Means of Sophistication.

One does not realise at first how thorough is this sophistication of the Thames below Oxford; perhaps the most completely permeating human alteration is caused by the locks. The whole character of the river, its brimming stately flow, its width, the form of its grassy marge are largely the result of this artificial damming at frequent intervals. And in the life of the river the change has been effected quite recently; very little beyond flash weirs, I believe, existed before the end of the eighteenth century. If the river is affected between the locks, what of the locks themselves, the weirs and the backwaters—are they not the pictures that one carries away more deeply engraved perhaps than any? For the necessary pauses made there give time for not only sights but sounds of rushing waters and whispering willows to etch themselves upon the memory. We must all agree that the practical features of these locks—the weirs, the trellis bridges, the pounds themselves, the lock houses, have all been carried out in that satisfying manner that water engineering nearly always succeeds in achieving. The latest lock at Swinford, above Oxford, that has none of the glamour of age or willows or trim gardens like Temple or Sonning, is yet a seemly work that shames the Beet factory across the meadow.

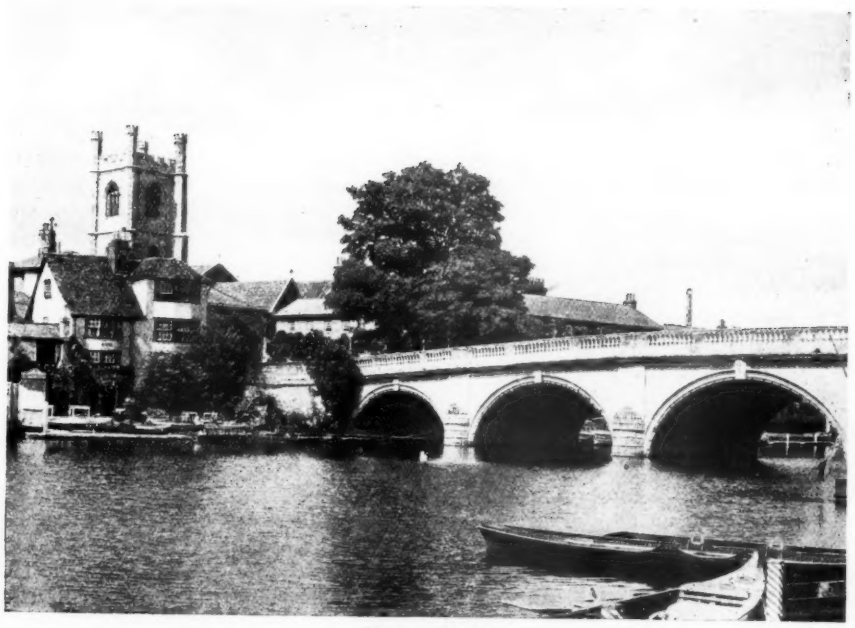
Bridges are perhaps next in importance, and there are in existence examples of all periods, of this human addition to the beauty of the river: from mediæval Newbridge, renaissance Swinford, Wallingford, Shillingford and Henley, the suspension bridge at Marlow, a charming change, Brunel's noble brick viaduct at Maidenhead and the two modern concrete bridges at Reading. These and many lesser ones, like that in brick at Sonning, produce the obvious beauties which one instinctively seeks to photograph; they are works of admirable engineering art, like Waterloo Bridge.

Next comes Planting, consciously done to heighten landscape effect. A comparison of the river prints of Havell and Faringdon of 140 years ago with the photographs of the same scenes to-day will show how much is due to the landscape gardener. At Hardwick and Mapledurham and at Cliveden and Taplow the scenes are hardly recognisable; and at the date of these prints much had already been done. No one could wish this skilful enhancement of fold and swell cleared away. Finally, a more modest human touch in the riverside must not be forgotten—the pollard willow—characteristic tree of the upper reaches.

The contribution of fine building to the valley scene cannot be described in detail—it is rare that a reach below Oxford is not affected. Roughly it may be divided into the Grouped Building—Town and Village—and the Single Building—Mansion and riverside Cottage. Oxford cannot perhaps be considered as primarily conceived as an adornment of the Thames, which, indeed, is somewhat uncertain of himself, his bed and even his name in its vicinity; and Reading cannot claim to add much in the way of beauty; but the smaller towns, Abingdon, Wallingford, Henley and Marlow, are truly riverside places producing the choicest pictures, and the villages are even more numerous; but perhaps Lechlade, Sonning and Bray may be singled out as main-stream villages and Sutton Courtenay and Long Wittenham as backwater

WALLINGFORD BRIDGE
Photographed by the Earl of Mayo

SONNING BRIDGE
Photographed by the Earl of Mayo



HENLEY BRIDGE
Photographed by the Earl of Mayo

MARLOW BRIDGE
Photographed by the Earl of Mayo

villages. These are random selections, but they may serve to show how much the beauty of the river is owed to these compact groups of warm brick, tile and thatch, from which soars the cool grey of the church spire or tower. It would be even more invidious to single out the best separate houses—the great mansions set back in their parks as Nuneham and Cliveden, or nearer the river front, as Culham Court and Medmenham Abbey: and the riverside cottage and small house, its architecture frequently not impeccable, but veiled by creepers and its garden generally charming with smooth lawn and roses.

Of course, the greatest pieces of architecture, directly seen from the river, are reserved for the lower end of our reach, Windsor Castle and Eton Chapel, a noble twin climax.

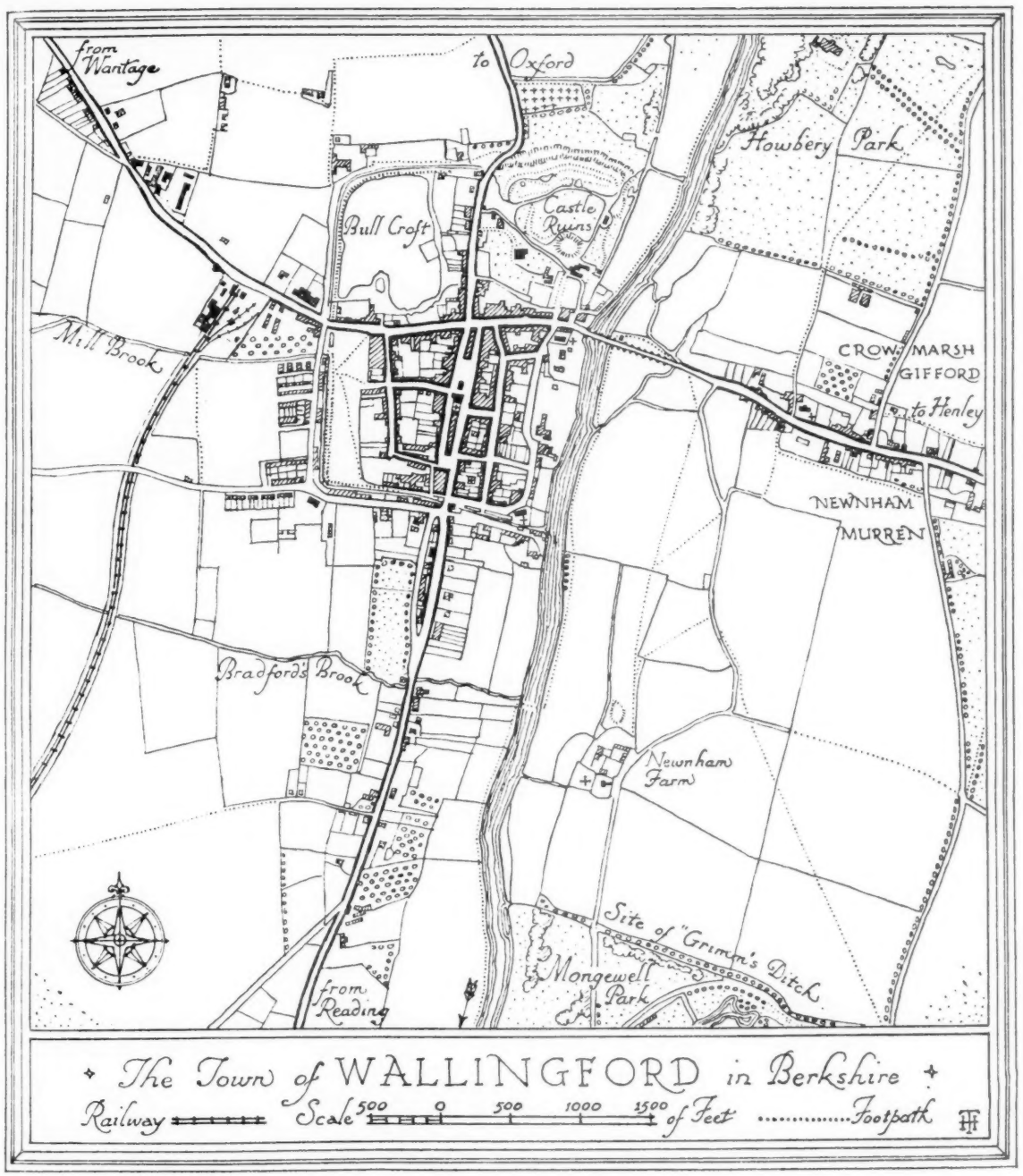
V. Disfigurements.

Indeed, before the railway came, the valley might have been under the control of one of those Chinese professors of Feng-Shui, whose power of control over the landscape was as great as that of the priest over human life, for it was reinforced by supernatural and esoteric powers.

Railways, in particular, with their embankments, tunnels and bridges have always been held by the Chinese to favour the circulation of a maleficent breath—a sort of whiff from the pit—and they and their contractors have frequently been exploded, as creating an inharmonious intrusion. We may perhaps see a wholesome incipient sign of this moral indignation in the Thames Valley, for the row of costly houses at Pangbourne have been locally and appropriately christened the Seven Deadly Sins. I could wish that the chairman of the Thames Valley Branch of the C.P.R.E. might be invested with something of this elevated power, in which offence is lifted on to the plane of moral indignation: I believe the present holder of this office would use his power with restraint and where necessary with ruthlessness. It would, for example, be interesting to know what punishment he would inflict upon the person who might attempt to cut down the Wittenham clump from the top of Sinodun Hill?

The disfigurements which have occurred might be roughly grouped under three headings: (i) those that are in their essence intrusions into the Thames scene, which should never have been allowed, and which should, if possible, be eradicated; (ii) those that arise from necessary or even desirable things being imperfectly carried out; (iii) those objects that may be good in themselves, but which are wrongly placed or out of scale and character, a more subtle but quite demonstrable producer of discordancy. There is perhaps a fourth type that may be only a disfigurement because of its newness or rawness, such as a new road. It is very necessary to have some such classification in view, in order that condemnation may be discerning and not wholesale. To the first group, unwarrantable intrusions, belong advertisements and litter and certain shacks and the railway coaches at Bablock Hythe. To the second belong many of those pretentious houses which would not have been out of place if they had been of reasonable form and colour. The third group, of things which, though good in themselves, may be ill placed, brings us into the region of really delicate taste: it is possible, for example, that a water-tower or a gas-container designed by an architectural or engineering genius may become a disfigurement—for example, if it were placed upon the island in the Henley reach. You will remember the story of Rousseau, exploring an Alpine valley, from whose wildness he judged his to be the first human foot that had trodden it. Suddenly round the corner of a savage rock he came upon a stocking factory; however well designed it may have been, it disfigured the particular character of the scene. So the lattice standards of the electric cables which may individually be commended (or even designed) by an eminent architect, can, in marching array, entirely destroy the existing scene—they may indeed create another effect, but that is another affair. The gasholder at Staines is not really an ugly erection: isolated in a photograph it is difficult to make it look offensive. But it is entirely out of scale; it may, of course, be suitable for the modern countryside to be dominated by the emblem of Gas, in place of that of Religion, or of Education or of Kingship.

Ribbon development along roads (in addition to its practical disadvantages) offends according to the third category of disfigurement; however good the individual houses might be (and this does not often happen) the ribbon introduces an urban character into the rural scene. Towns and villages, of course, are necessarily made up of ribbons of building along streets, but they are bunched and knotted together, their loose ends



WALLINGFORD, IN BERKSHIRE

Diagram by W. Harding Thompson [*F.*]

not straying too far afield. But untie these bows and unroll the ribbon and you interpenetrate the country with an urban feature, while at the same time its real urbanity has exhaled. Similarly it is out of character with the river to attempt to preserve a strip of even width (a green instead of a red ribbon) as a sort of town boulevard, regularly planted with trees—this is quite foreign to the genius of the place.

VI. Double Approach to the Problem.

The Thames Valley has not, in spite of its popularity, suffered as much as some places, but it is clear that change is threatened and it must therefore be moulded into growth upon lines which will continue the good traditions of the past. At the same time, there are long reaches that one could wish to remain precisely as they are. Might we put it that there must be room for Morris of Oxford and Morris of Kelmscott? There must be regional planning and stabilisation of tenure.

VII. Features of a Regional Plan.

Among the numerous elements of a regional plan, those points which more specially concern the Thames may be thrust home. (i) Roads are always the first to engage attention and sometimes to engross it as well. Generally speaking, the aim should be to free the riverside of all through traffic, either going along it or across it: to keep these parallel and cross roads for river traffic only and to be extremely conservative about widenings. From Reading to Wallingford as little as possible should be done. Nothing again can be more short sighted than to widen the approaches to bridge-heads, discharging a heavier volume into the bottle neck of a town street already overloaded. Wallingford, Sonning, Henley, Marlow must not only lose their bridges, but their main streets as well if more traffic is encouraged to flow along them. The widening of Abingdon Bridge, so well carried out without destruction of its beauty, is a local improvement—it does not entail evisceration.

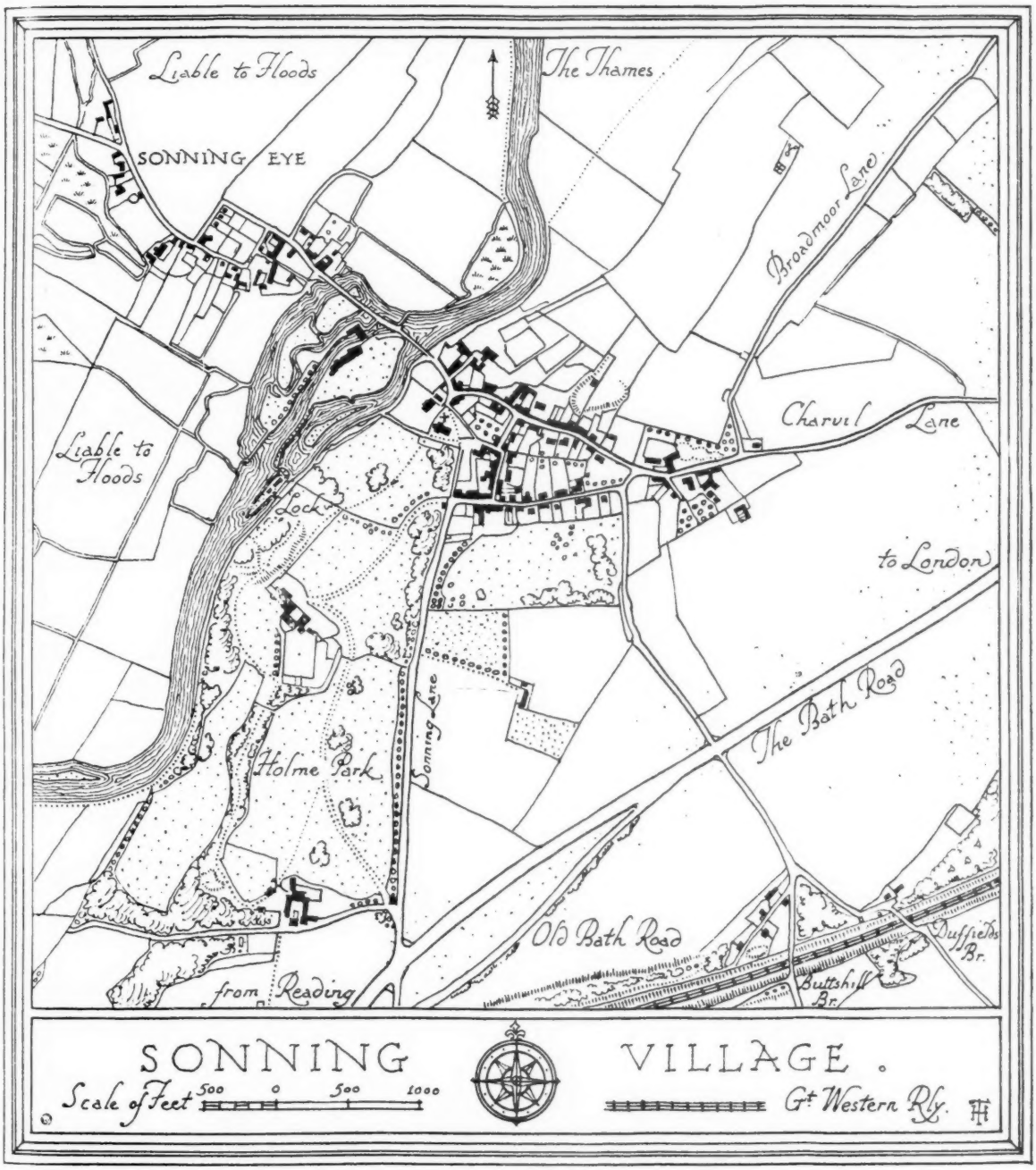
Do not let us also try to be too symmetrical: if there is a road on one side, don't assume there must be one to match it on the other: from Caversham to Goring is a precious stretch, only open to the foot-passenger. (ii) Low-lying lands—the river meadows—should be retained so far as possible as they are: riverside building, even summer bungalows, should not be allowed on these flood lands.* Here, again, the æsthetic and practical march hand in hand. If all new building were restricted to the rising ground above the floodland, the varying width of the floor of the valley would almost of itself group them into natural conformity. The advantage to the purity of the water which Oxford, Reading and London drinks need not be laboured. The regular washing out of the riverine cesspools by floods is not a pleasant thought to have in mind.

(iii) The third point, already alluded to concerns the grouping of buildings. It would be extremely attractive scenically and hygienically if certain places, either enlargement of existing settlements or new areas, could be definitely planned for groups of houses. This is going beyond control of what springs up spontaneously—it is rather development planning—encouragement to certain spots to grow, and is closely bound up with the problem of pooling of values, too intricate to discuss here. The placing of industries is in this same category, but I would venture to assert that the general industrialisation of the Thames would be bad economics. This does not mean that Mr. Morris at Cowley should close down. Fortunately these works are very well placed in relation to the river, and the Oxford town planning scheme is keeping a tight hand upon industrial straggling. Any industry that shows its face on the riverside must see that its expression is agreeable: it is remarkable that the boat building and repair places which exist upon the Thames' attractions are as ugly as those people usually are who traffic in human beauty.

VIII. Elevational Control.

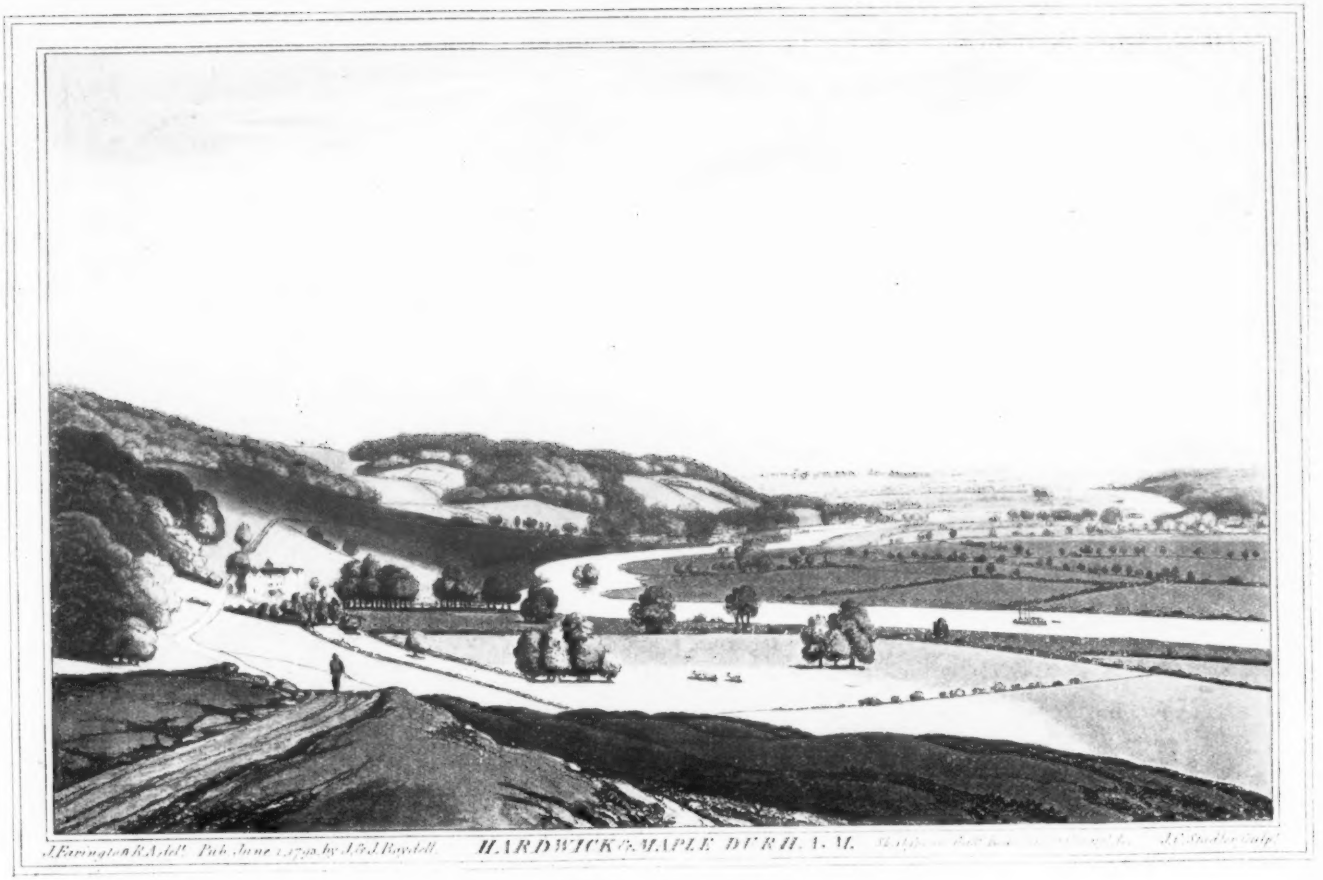
Elevational control, both of design and material, is needed in the Thames Valley as much as, or more than, anywhere. The question of whether the requirements will prevent the erection of the absolutely cheapest and shoddiest building need not trouble us here. If such things should be erected anywhere the Thames Valley is certain in the national interest not that place. If these building pariahs are ruled out, the question of cost does not arise—except that usually amendment will mean a reduction. For example, a penance imposed for the absolution of the Seven Deadly Sins would have

* The proper summer habitation in such conditions is a tent.



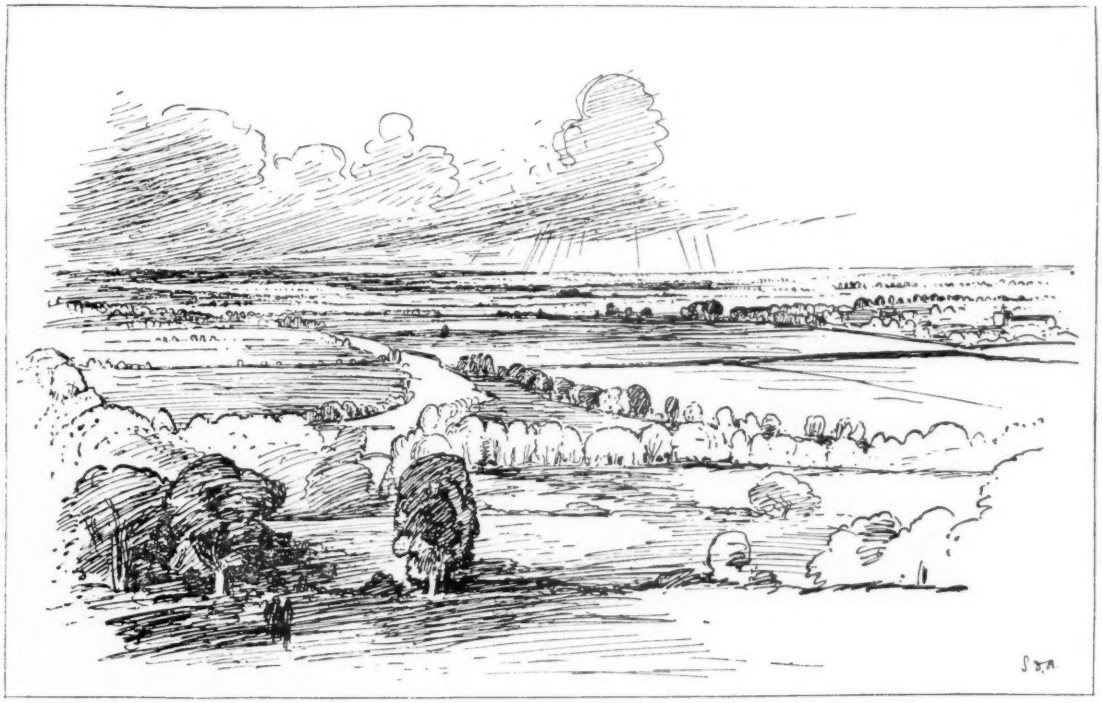
SONNING VILLAGE

Diagram by W. Harding Thompson [*F.*]



HARDWICK AND MAPLEDURHAM.

meant the casting off of much tawdry bedizenment. But I hope that architectural control will be exercised with restraint—it should be used more for the prevention of outrage, than for the promotion of any one type of design. I believe that much æsthetic wrong doing is the result of ignorance, often even in high places; and the tactful persuasive work carried out by our joint Panels is better than the invocation of Ministerial powers. These are necessary as a bogey or djin to be held in reserve, but rarely to be called up. The Consultative Panel system, which is working so well in further Oxfordshire, should be applied to the whole of the Thames Valley.



Prospect from Sinodun Hill, looking north, with Oxford to the left and Dorchester to the right
Day's Lock is behind the trees in the foreground and "Dykes Hills" (ancient earthworks) lie between Dorchester and the river.
Sketch by Professor S. D. Adshead [*F.*]

IX. Means of Securing Stability.

Simultaneously with obtaining and exercising power of control of growth, it is necessary to seek means, perhaps new means, of securing the stability of large areas. Under the Town Planning Act this is possible by means of the Private Open Space in a scheme. The owner who does not wish to offer his land for sale for building is, under this method, not forced to pay death duties on a building value which he has no intention of realising. It suits admirably those estates which have an obvious building value. But it would be advisable to extend the principle further, and with more general application to exempt specially beautiful areas (and this covers all river-fronting properties) from death duties, as pictures and works of art are exempted. Would not probably most of the 70,000 beeches recently sold to pay death duties, largely on their own value, have been spared if this had been in force? From the Thames the public enjoys, through its eyes and from field paths, a large proportion of this beauty; it is not cut off by a 12-foot park wall. What it

chiefly wants is to remove the danger of forced sales and the consequent handing over of estates to the land butcher. Except round Oxford, where the Preservation Trust is effectively active, and near Reading, it is not necessary to buy large tracts for public use. The river itself is the public's means of access, and what it wants is the present usage and upkeep to remain on as permanent a basis as possible. We are continually imposing restrictions upon the use of land by its owners in the interests of the community; this stabilisation is a relief in another direction, and it is equally in the interests of the community.

X. Thames Valley Branch—Custodian for Nation.

The Thames Valley Branch of the Council for the Preservation of Rural England has been formed for the special purpose of harmonising these two aspects of stabilisation and development; having representatives of the Local Authorities, Thames Conservancy, the Preservation Trusts and Societies (Oxford, Windsor and Wallingford to Mapledurham), the Rural Community Councils, Archæological and Architectural Societies and the landowners; it is thus in a strong position to get things done. In fact, it is the custodian of the Thames on behalf of the Nation.

XI. Dangers Immediately Ahead.

And there are problems and even dangers immediately ahead. The hints of universal drainage schemes of tributaries, and even main river, are in the air. There is a dangerous plausibility about the idea of extending the Wey Valley scheme up the river. To drain waterlogged land sounds an attractive policy, but tampering with nature is always dangerous—to eliminate the flood lands, the safety valves of the river, and to rush the water down upon London would be disastrous. It would probably mean embarking upon a scheme of embankments and levees for the main channel, as is done on the Mississippi; gone will be all the beauty of the river. The water meadows, excellent for hay crops and grazing, will be converted into indifferent building land, whereas there are thousands of acres available of higher and better ground; and, lastly, the springs, fed from the percolation through the chalk, will dry up, not having the flood months to feed them.

Electric standards have been planned to pass along the whole course of the upper Thames; tactful persuasion, perhaps, can push them farther afield. It is idle to point to the Campagna, whose landscape is ennobled by the viaducts; the Campagna is a dull and dreary desert, fit background for an engineering parade. The upper Thames will lose entirely and finally its particular type of beauty if these standards march along its course.

The springing-up of shacks on the model of the railway wagons at Bablock Hythe, the threat of new 80-feet high gasholders to punctuate the landscape, the prospect of the felling of noble beech woods—all these must be dealt with, in no petulant mood, but firmly to prevent wanton outrage and to control necessary change.

XII. Two Final Points.

The Report and Survey in the preparation of which I had the honour to be associated with Lord Mayo, Professor Adshead and Mr. Harding Thompson is but the first step. It surveys the ground and suggests some general lines of action. The serious work is for the future.

Perhaps two final points might be made. The first—a general one—that the Thames Valley proves the necessity for the study of landscape design, if we are to have rural planning powers. The general public, no less than professional designers, must learn to look beyond the hedge of the garden, the paling of the park or the last group of the garden suburb; the whole countryside is subject to æsthetic laws of sophistication.

The second—a particular one to the Thames—that the Valley is not so safe as it seems.

There is a large number of well-disposed people, landowners and others, who are looking after its interests. But, unfortunately, they cannot live for ever. The future is largely dependent upon the hazard of human life. Steps must be taken to put things upon a more permanent basis.

(All the illustrations used in Professor Abercrombie's Paper have been taken from the Report of the Thames Valley Branch of the Council for the Preservation of Rural England.)

Discussion on Professor Abercrombie's Paper

(THE PRESIDENT, SIR BANISTER FLETCHER, F.S.A., IN THE CHAIR.)

The Rt. Hon. LORD DESBOROUGH, K.G., G.C.V.O., in proposing a vote of thanks to Professor Abercrombie for his paper, said: I rise for the purpose of proposing to our talented lecturer a most hearty vote of thanks for his lecture. We have been taken down the Thames, which, as Chairman of the Thames Conservancy for many years I ought to know something about, with the speed of a motor launch, and I certainly enjoyed everything he said. Professor Abercrombie is engaged in a great work, trying to preserve something of what remains to be preserved of one of the most beautiful rivers, or what used to be one of the most beautiful rivers of Europe. The part from Cricklade to Lechlade and to Staines may yet be preserved by the united efforts not only of those who are principally interested in the land, but by public opinion, which will not allow, I hope, in the future, further desecration of our beautiful river. There was a good deal in what Professor Abercrombie said with which I agreed, but I do not know that I agreed on any one point more than on this: that, in the future, buildings should not be allowed to be placed for human habitation in areas which are known to have been flooded, and, in all human probability, will be flooded in years to come. If that provision were carried out, we at all events would be able to preserve the margins of our river.

Professor Abercrombie alluded in a few words, about three-fourths through his lecture, to what might possibly happen supposing a large scheme of preventing Thames floods were carried out. Well, the flood of this year was a very large one. As you probably know, the Thames is measured every 24 hours—from midnight to midnight—and we know how many gallons go over Teddington Weir at every hour, and have done for the last 41 years. To take away the flood of last year would have required two Thameses. The flow then was 10,500,000,000, at its height, and what the Thames will do now normally is 4,500,000,000 without flooding. Twice this figure is 9,000,000,000, so that two Thameses would not have stopped this flood. To increase the volume of the Thames enough to double its capacity would alter the Thames, and it may then be a good river, to carry off the water, but it would not be our old Thames, and the two views are somewhat conflicting. Those who have built houses which are liable to be flooded, where they never ought to have been built, that is, on ozier beds which have been flooded every year that I know of, are now to have their houses and lands absolutely preserved from all danger of flood. It can be done, but at enormous expense; and the lovely bridges and banks which we have had projected on to the screen, from Cricklade to Staines, will not exist. Those who have to deal with this question will certainly have to face that possibility.

We all know what an amount of time Professor Abercrombie has devoted, with those who have helped him in surveying the Thames from Cricklade to Staines; and I take this public opportunity of thanking him, not merely for the lecture which he has given to us, but also with his fellow workers for the splendid efforts they have put forward in bringing out this survey.

The Rt. Hon. THE EARL OF MAYO, J.P., in seconding the vote of thanks, said: I am impressed, as I well may be, but the more so since I heard Professor Abercrombie's lecture, with the fact that an arduous task lies before those of us who have now undertaken the responsibility of carrying out the work of the preservation of the Thames Valley. Let me assure Professor Abercrombie that the Thames Valley will be grateful to him for having read this paper. It will help our cause, and I hope it will have abundant publicity.

We have great hopes. We hope that in due time—and I trust it may be within a not very long period—the Thames Valley, with all its charming towns and villages, will become a model of what that unique valley ought to be. We hope there will soon arise throughout the wide watershed a large preponderance of public opinion determined to rid the Valley of every hideous advertisement, determined to rid it of every disfigurement, determined to preserve its present beauties, to add to those beauties, and to continue until we are able to say, as I know every one in this room desires, that the Thames Valley is a perfect example of pure and unspoiled English scenery.

I would like just to say this: that there hangs over us, as has been indicated by Lord Desborough, a nightmare in the shape of the threat to drain the whole of the Thames Valley and its tributaries. We have seen what has happened in the Wey Valley, where an extravagant and—as I think—unnecessary scheme of drainage has been authorised. The River Wey is to have all its bends cut through, and is to become nothing more nor less than a canal. If that is going to be continued, if other tributaries of the Thames, and indeed if the Thames itself, is going to be treated in this manner, all its beautiful bends, all its picturesque islands, all its peaceful backwaters, all its beautiful bridges will be swept away. And what will you have left? Nothing but a straight, huge and hideous canal. It is quite unthinkable that such a thing should happen. Yet it is threatened; and there is only one thing which can pre-

vent it, and that is, as Lord Desborough has said, public opinion. We have just seen what public opinion can do. Public opinion has, rapidly and decisively destroyed the scheme for making huge sewage works in the historical and beautiful Syon Park ; and we hope that public opinion in the Thames Valley will be so strong that it will frustrate these horrible schemes which will destroy it and make it not only totally different to what it always has been, but something which I hope we are all determined it never shall be. There is one thing, Sir, that I know we can rely upon, and that is the cordial support of every member of this great Institute. I know they will help us in our endeavour to secure good designs for new buildings, to secure good taste in restoring old ones ; and I am sure they will exercise all their powers of persuasion in the encouragement of harmony and beauty.

In conclusion, Sir, I would just like to say this : that he is a fortunate man who has Professor Abercrombie for a colleague. To work with a man of such unbounded enthusiasm and energy is indeed delightful. I look back to the days which we spent together on the Thames Valley survey as days of great enjoyment. How, indeed, could they have been otherwise ? For there is no one who could be a kinder, more cheery, or more delightful a companion than my friend Patrick Abercrombie. It is with the greatest possible pleasure that I second this vote of thanks.

Professor S. D. ADSHEAD [*F.*] : It was my privilege to be associated with Lord Mayo and Professor Abercrombie in the survey which has recently been made of the Thames Valley. Professor Abercrombie has, in his picturesque language and fluent oration, given you an excellent panoramic view of the Thames Valley : a very illuminating exposition. The solution of the Thames Valley problem is really part of a problem which confronts us to-day in regard to the whole of England. The difficulty with which we are now confronted has come upon us with appalling rapidity, and is closely connected with transport. Whereas twenty years ago the Thames Valley might have been regarded as a paradise safe from encroachment and desecration, to-day, it is either open, or is threatened to be opened, to a crowd of irresponsible people who are attracted by the less responsible speculative builder. There are two dangers : the one is the provision of new means of access, and the other the provision of resting places for the crowds when they get there. It is futile to attempt to prevent the construction of the bungalow in its various aspects without at the same time considering the bigger problem of the approach. Curiously, at the present moment, the thing which struck me more than anything in making the survey with Professor Abercrombie, was that the Thames Valley is extraordinarily secluded and unspoilt, and we are privileged to-day in having the opportunity of preserving it, preserving that sophisticated park-like character which is unique.

I think the first danger we must attempt to avert is the introduction of " improved lines of access." We must watch every adventure of the railway company, of the road engineer to make more accessible roads, and of the charabanc proprietor, all engaged in providing better means of access for the general public. As a matter of fact the public can get there and enjoy it in the right sort of spirit, and, as it is to-day, without spoiling it, if they care to do so ; but if we are going to have promenades down each side of the river, and charabancs in continuous progression, we shall lose all the seclusion which is the most valuable of the Thames-side amenities and interests. This preservation of the beauty of the countryside could nowhere be more emphasised than it is in the Thames Valley ; I cannot think of any strip of English scenery which is more deserving of care and preservation than the Thames Valley. Professor Abercrombie has shown that it has a character peculiarly its own, in that it has arrived at a sophisticated period when, if it is carried further, it will become too artificial, and where it must be approached with the very greatest caution as to any kind of " improvement " or alteration. It has a curious association of characters : there are villages, like Sonning, neat and tidy places, which have not got that sophisticated character of the park-like scenery which characterises places like Newnham, where we have the delights of Claude Turner, Gaspard Poussin and other eighteenth-century painters of English landscape scenery in a classic manner ; there is nothing else quite like this either in England, or, I think, anywhere in the world.

Colonel R. W. FFENNELL : This, of course, is a question not merely for the inhabitants of the Thames Valley ; it is a great national question ; it is one which must interest many people who live far from the shores of our own islands, this safeguarding of the beauty of the River Thames. It has been a great privilege for all of us, I am sure, to have heard the speakers of to-night. I would add only one suggestion, if I may ; it is that, apart from certain restrictions which should be imposed, such as the one urged by Lord Desborough, that buildings shall not be allowed in areas liable to flood, it would be well if it were laid down, and laid down soon, that no buildings in any part of the country should be erected without the assistance of an architect.

Mr. EDWARD WARREN [*F.*] : I have shown sufficiently, I think, my love for the Thames Valley by going to live in it, and by building a house there. But I have listened to Professor Abercrombie with the greatest possible pleasure, and especially to his description of towns and villages which I know and love. I think it a dreadful sign of the times if we have to feel

that the Thames can no longer be protected. I have seen it protecting itself recently after the heavy rains, when acres upon acres of the meadows around Oxford were flooded, showing that, in its present condition, which I hope may long be maintained, it is impracticable to build anywhere close to its banks, at any rate anywhere between Oxford and Reading, except in one or two districts where those banks happen to be high. But at any rate the Thames has that element of self-protection which will preserve a great part of its area, unless some most drastic steps, which I hope we shall not see, are taken to rob the Valley of its beauties. On the banks farther down than Reading there is a particularly pleasing type of old house which has arisen from natural circumstances, from the absence of rock and the presence of clay, delightful old brick-and-timber and plastered houses.

I know all the charming towns which Professor Abercrombie has so happily shown and described, and I think there is a singular poetry which haunts the Thames Valley, and I am certain from the way in which he spoke that Professor Abercrombie thoroughly appreciates this. What we have to do now is, not only to protect the immediate banks of the Thames, but the ground a little way inland from it, where it is possible, and, unfortunately, eminently practicable, to build rows of houses. Those of you who know Dry Sandford, close to Oxford, will know that it used to be beautiful, but, if you pass close to it now, you find a terrible congeries of raw red houses. Of course, they will look better in the course of time, but at present they are very disagreeable ; and one cannot help feeling that instead of the ordinances which seem to render necessary a toeing of the line in an absolute manner, it would be better to allow houses to be built, on certain areas of land, and rule that they shall not be in line. The promoters could arrange that a certain number of houses should be stepped back, and others set forward, and so prevent the terrible sameness which you get in places like Didcot, where rows of thoughtless houses have recently been put up. That is one of the elements which is destroying, not the immediate Thames, because usually the ground close to the banks is not suitable to build on, but the land within, say, a quarter of a mile of it. We see these ugly rows of houses spoiling the character of the country, especially that part of it which is seen from the low hills which are one of the charms of the upper parts of the Valley.

Dr. RAYMOND UNWIN [*F.*] : It is not easy, as Professor Adshead said, to speak of the Thames Valley without a good deal of feeling. It is well over fifty years since I first rowed up Thames from Oxford to Lechlade ; I have been many times since ; and I was glad to find, a few years ago, that only one noticeable new house had been erected in that stretch. That was a great relief. We owe Professor Abercrombie special gratitude for the work he has done during the last few years in calling attention to the importance of preserving rural England. Many of us have been engaged in trying to preserve the outskirts of our towns, and other matters ; but Professor Abercrombie has made this piece of work his own ; he has brought to it a genius and a common sense combined which are very powerful and very persuasive. And I feel sure that what he is doing will be really effective.

It seems to me we have to concentrate on a practical point here. It is not an easy point, but it is one which we have to be able to deal with. We must find some way by which, with fairness to all parties, including the public and owners of property, we can say : Building may take place here ; it shall not take place there. And one of the places where, mainly, it should not take place is along the banks of the Thames within sight of the river. That will be subject to exceptions. There will be points at which Professor Abercrombie would doubtless say that well-designed building groups could be erected, not only without harm, but possibly with advantage. In the main, it seems to me that that Valley is one of the strips of land that has a tradition, that has a peculiarly English type of beauty ; and the more we can preserve it from the inroads of modern building and modern development, the safer it is. I very heartily wish that we may all do what we can to strengthen the hands of Professor Abercrombie, Lord Mayo, Mr. Harding Thompson and Professor Adshead, who have done so much to save this priceless piece of English scenery for the enjoyment of those who may come after us.

Mr. HARDING THOMPSON [*F.*]: I should like to draw the attention of the people in this room to the acknowledgment which we made in our report to the kindness of the Thames Conservancy, and Lord Desborough in particular, for giving us the use of his launch in our survey work. One of the things which strikes one most in travelling about the Thames Valley is that very carefully and consciously the old villages, or nearly all of them, were placed on high ground, the other land liable to floods having been left severely alone.

Another thing is that the old farm houses and villages are nearly all connected by an excellent network of footpaths. It is almost incredible the total mileage of public footpaths in this country which are very little used. In these days when the main highways are becoming almost impossible for pedestrians and horsemen, and for farmers and others who have to drive cattle, it would be extraordinarily useful if we could preserve these secondary means of communication across the open country. They add much to the amenities.

Professor Abercrombie mentioned railway carriages ; he showed railway carriages being used on the banks

of the Thames. I have noticed in other parts of the country, when on survey work, particularly in Cornwall, that it is becoming the fashion to dump railway carriages along at different points of main highways and use them as village halls. In villages in Cornwall there are several decrepit railway carriages close to the carriage way, and in that way disfiguring the village. At many railway stations there are advertisements for railway carriages for sale—I have one particular railway company in mind.

I should like to say how very much I have appreciated the opportunity of working with Professor Abercrombie, Lord Mayo and Professor Adshead on this survey, and how very instructive it has been. I hope the real work, which is now beginning, to preserve the Thames Valley, will find plenty of supporters, both in this room and outside it.

Mr. ARTHUR CROW [*F.*]: I want to mention only one point, which occurred to me as I heard the lecture. It is this: I never knew before that the Thames Valley stopped at Staines. I am still learning and willing to absorb new ideas, but I did not know that. We have to remember that the Thames Valley extends right away to the open sea, as you can realise when you study the map. The land on either side is elevated, and that is the reason for the course of the river. I can well understand that Professor Abercrombie did not want to come too far along the Thames, otherwise he might have got into difficulties at a little place they call London. But, by-passing that little village, with all its eccentricities, I would take you to Woolwich and Barking, and ask you to follow me down the river to its mouth. Some years back the Garden Cities Association appointed a small Committee (The Thames-side Housing and Development Committee), of which I was Chairman, and we studied that part of the river all the way down; and we found that not only were there beautiful stretches of marshes, the haunt of wildfowl, being fast obliterated by factories, but there were one or two beautiful vantage points, one of which in particular I will mention. That is a spot at East Tilbury, just beyond Tilbury Docks, a little elevation or hillside at a broad bend in the river. When you climb that on a summer afternoon, when the tide is high, you see the great ships going down the River, ships which represent the trade of London reaching out to all parts of the Empire and of the world. I think we could take steps to secure one or two of those beautiful spots for the use of the inhabitants of those fast-growing areas such as Dagenham, Purfleet, and Tilbury itself. I would appeal to Professor Adshead, who is in charge of the South Essex Regional Plan, to make a special note in his Report of this beautiful viewpoint, that it may be preserved to the East End of Greater London for all time.

Mr. BASIL HOLMES: I am a Member of the Middlesex County Council, and of the Thames Conservancy. The last speaker said we stopped short at Staines. But I would say that the Middlesex County Council and the Surrey County Council have appointed a joint committee, of which I have the honour to be the Chairman, and it is engaged in a survey of the river from Staines to Putney, which is a far more difficult job than the Cricklade to Staines section. The beauties of the river in this lower section have been already very much interfered with by bungalow building, waterworks, and other things. I am happy to say that the survey is almost finished, and I shall soon be calling the committee together, when I hope we shall make some useful suggestions and recommendations. But our difficulties have been greatly added to by the Wey Valley Drainage Scheme, which necessitates consequential enlargement works in the Thames, at an expenditure of £300,000 between Shepperton and Teddington Locks. You can't spend £300,000 in 11 miles of river without leaving some marks, and our survey has that matter to contend with. But we shall see, as far as possible, that the existing amenities of the river shall be interfered with as little as possible. As I have said, I am also a member of the Thames Conservancy, and Lord Desborough and I, perhaps more than other members of the Board, are particularly concerned with the preservation of the amenities of this unique river, and we do all we can to preserve them.

I am especially interested in the question of access to the river. As Professor Adshead said, we do not want promenades or roads; but it is very necessary we should do what we can to keep up the towpath. There is no more delightful continuous pathway in the kingdom than this 136 miles of towpath along the river. But its condition in places is unsatisfactory, and it is nobody's business to keep it going. If the river causes erosion and the towpath disappears, there is no means of reinstating it, except by negotiations with the owners for adjoining land, where the erosion takes place, and reinstatement may be a costly business. It will be well for us to see what can be done to secure the permanent safety of the pathway. Otherwise the public access to the river will be very circumscribed, confined only to isolated spots, and to people who care about boating, and are able to incur the expense. The towpath walk affords delightful opportunities for seeing unfolded before one's eyes the beauties of the various reaches of the river. Only in one or two towns like Reading do we need a "promenade." We merely need for the greater part of the distance the preservation of the towpath bank, should it give way, as the actual pathway thereon, alongside meadows, keeps itself.

Major H. C. CORLETTE [*F.*]: I wrote to Professor

Abercrombie recently suggesting he might do what he could to extend the view of rural questions, so that they might be applicable not only to England, but also outside it. He has used one word in his address this evening, and that was " Runnymede." I understand that Runnymede has recently been presented to the nation ; and it is sufficient to suggest that Runnymede as part of the Thames Valley means that it is not only an English question but is a matter which would appeal very much to people outside this country. I refer to the Dominions as a whole. If they realise that an endeavour is being made to preserve this Thames Valley, which to me is the epitome of England, we shall have done well.

The PRESIDENT : We have listened to-night to a very delightful paper by Professor Abercrombie, who, I am sure, has given us a good deal to think about, and we are also indebted to those who have added to our knowledge of the subject in the discussion.

One thing which seems to me to be very satisfactory in connection with the Thames is that it has its own protection in its own hands. That is to say, the flood areas seem to afford a reasonable means of protecting the Valley of the Thames from the building of unsightly bungalows. I should have thought that in any town-planning scheme the flood area could have been ruled out, in considering land for building upon. We have a Greater London Regional Town-planning Committee, and Dr. Raymond Unwin is our technical expert, so I should think something could be done in regard to that matter, although I do not recollect how much of the Thames Valley comes into the Regional Planning scheme. I think it ends somewhere near Windsor.

The vote of thanks has been proposed by Lord Desborough, and we are very glad that he has been good enough to come here to-night. For many years Lord Desborough has been Chairman of the Thames Conservancy, and he has done much to preserve the amenities of the Thames by means of some of the charming little bridges which he has had erected across the upper parts of the river. As long as the Thames Valley is under his charge, I think we may feel fairly safe that as far as his power goes the amenities will be protected. We are also very pleased to welcome here the seconder of the vote of thanks, the Earl of Mayo, who has been largely associated with Professor Abercrombie in this matter. I therefore have the greatest pleasure in putting this vote to you.

Carried by acclamation.

Professor ABERCROMBIE, in reply : It has been a great pleasure to carry out this work with my colleagues whose names have been mentioned. And we have the great satisfaction that the Thames branch is in such safe hands. Lord Mayo has kindly consented to act as Chairman, in succession to Lord Astor. Lord Mayo is a man who knows the Valley from thread to needle. Like ourselves, he is a technical man ; Lord Mayo is an engineer. And fortunately we have with us to-night the Secretary, who has so kindly undertaken this onerous task, General Sir Francis Bingham. Between those two, I feel that everything which is possible will be done to keep the beauties of the Thames Valley and see that change is properly ordered.

So we have finished one section of the work, the Survey, and it is now the real work begins, and it is in good hands.

NOTE.—A Regional Planning scheme has been prepared for the Buckinghamshire side of the river by Mr. Davidge, who is also engaged upon a regional scheme for Berkshire. An Oxfordshire Regional scheme is being prepared by Lord Mayo and Professors Adshead and Abercrombie.

Himalayan Architecture. Part II*

BY A. H. LONGHURST, SUPERINTENDENT, ARCHÆOLOGICAL SURVEY, SOUTHERN CIRCLE, INDIA

FIG. 16.—TEMPLE NEAR BHYRAB, PATĀN, NEPAL

BEFORE describing the typical example of a Nepalese temple shown in Fig. 16, it seems necessary to say something about this little known State, and for this purpose I cannot do better than quote from Mr. Percy Brown's fascinating book, *Picturesque Nepal*, as this work contains an excellent description of the arts and architecture of the State.

It seems that the original inhabitants of Nepal are the Newars, while the present ruling race are the Gurkhas, who conquered the country in 1768. For a sound administration and an ideal military organisation, the methods of the latter may be studied, but for the arts and architecture, and all that is picturesque and historic in Nepal, we are indebted to the Newars. The latter are said to have come originally from Tibet and its vicinity, and settled in Nepal in remote times. They now form the bulk of the population of the ancient capitals of Patān and Bhatgaon. As carpenters, wood-carvers, and metal-workers, they are particularly skilful, and the picturesque appearance of old Nepal is mainly due to the artistic temperament of the Newars. The carved wood and embossed metal work on the sacred buildings and palaces in all parts of the valley, is one of the most striking features of the State. As in other parts of India, this art is almost entirely connected with the religion of the people and to understand it, some reference to the cult of those responsible for its production is necessary.

The prevailing religion of the Newars is Buddhism, and has been so ever since 250 B.C. when the great Asoka visited Nepal and made Buddhism the religion of the State. Asoka is said to have commemorated his visit to the country by the foundation of a city and the erection of a stūpa and other religious buildings in its centre. The site selected for the new capital is now occupied by the present city of Patān. What particular

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dynasty held sway at the time when this important event took place is not clear, but at a date previous to the Christian era a race of Rajputs overran the country and founded a long line of kings which are recorded as belonging to the Suryavanshi dynasty. Buddhism still remained the chief religion of the country, but the ruling race were Hindus, who endeavoured to introduce into the temples the cult of Siva. Thus, we have an early instance of the two religions being brought into contact, a state in which they exist at the present day. The Suryavanshi dynasty came to an end in the sixth century A.D., at which time the country was conquered by the famous Vikramaditya of Ujjain. He favoured the Hindu religion, but never persecuted the Buddhists. He seems to have left few records of his occupation of Nepal, but indirectly his association with the country was significant, as it coincided with the commencement of a new dynasty known as the Thakuri, and it began with a new era called the *Samvat*, the system on which historical dates in Northern India are founded. The Thakuri dynasty continued in one form or another until the eleventh century. During this period, we have an interesting picture of Nepal recorded by a Chinese ambassador. The latter states that :—" The houses are of wood, painted and sculptured ; the people are fond of bathing, of dramatic representations of astrology, and bloody sacrifices." The king, named Narendra Dēva, is said to have " shown a marked devotion to Buddha. The pavilions of his palace are covered with delicate workmanship. In the middle is built a tower of seven storeys, the grandeur and wealth of which is most remarkable." He also mentions that " Buddhism and Brahmanism flourish in the principal temples, which are wealthy and well supported. Numerous monasteries shelter the Buddhist priests. Commerce prospers and trade is well organised and directed." In other words, the Nepal of the early Middle Ages bore in many respects a striking resemblance to the Nepal of the present day.

The high standard of the doctrine and discipline that marked the character of early Buddhism has become considerably modified in Nepal by the introduction of many of the more popular features of modern Hinduism, and thus the religion has lost much of the chaste and simple character for which it was originally noted. In this manner, we find in the precincts of a Napalese temple or monastery, a medley of Hindu and Buddhist symbols and images. A temple in Nepal will often display an image of the Buddha, calm, dignified, and reposeful, while in close proximity is placed a many-armed figure of Dūrga, or Kāli, symbolising all that is restless and terrible in a faith which rules by fear. Interwoven with these two creeds is a third form of worship. Peering from under the broad eaves of the temples in the form of wood-carving, leering in gaudy colours from the red walls of the temples, the Tantric element of Nepalese Buddhism appears in many architectural forms. Who and what are the devotees of this unhallowed cult is never divulged, but that it has a firm hold on a large community is proved by the frequency with which its various aspects are pictorially expressed.

Concerning the wood-carving adorning these temples, Mr. Brown states as follows :—" Of what may be termed the minor arts of Nepal, that of the worker in wood is the most important, and in his productions this craftsman has been even more prolific than the metal-worker. But he has rarely if ever aspired to statuary in this material, although his caryatid roof struts are at times such wonderful figure groups that they may almost be classed as fine art. But regarded broadly the Newar wood-worker has subordinated his handiwork and utilised it mainly in conjunction with the architect, so that his conceptions come within the category of the applied arts. In his carved tympanums, those large characteristic panels applied over all Nepali doorways, the wood-worker has been allowed considerable latitude, and these features are often complete pictures, religious subjects sculptured out of wood, and treated with a freedom which adds not a little to their charm. The motive of these ' over-doors,' whether in wood or metal, is ordinarily the same general idea—a story in the centre depicting a mythological incident, or a pictorial arrangement of various deities, while around the whole in high relief is displayed a kind of traditional convention of Garuda, Makaras, Nagas, and ornament, nearly always composed on the same general lines. A picturesque detail and one on which the Newar wood-carver delighted to show his skill and versatility, is the afore-mentioned roof strut, supporting the wide overhanging eaves of the pagodas. The broad roofs of these buildings naturally threw deep shadows, and the duty of breaking up this dark mass with some light and graceful design was left to the artistic devices of this craftsman. This individual conceived the idea of converting these constructive elements into figures of deities provided with many arms, and the problem was solved in a most satisfactory manner. The light catches these fanciful figures with outspread arms, and the heavy appearance of this shadow is at once corrected, and an artistic and picturesque effect attained. (Fig. 16.) But this is only one of the many clever contrivances invented by the Newar wood-worker to overcome constructive difficulties of a like nature. That useful element in sound building, the wooden lintel, is a special characteristic of Nepalese architecture, and the decorative treatment of this forms an important feature of the style. A masonry composed of a good red brick flashed with a kind of half glaze, and bound with beams of timber, is the manner in which the builder carried out his work in the days of the Newar kings,

and over this sensible solid framework the metal and wood-worker were allowed to bring their artistic fancies into play, with a result in every sense satisfying. This structural device of the lintel, as used in connection with the doors and windows, gives the buildings of Nepal their distinctive character, and the particular beam above and below the window, treated in the Newar manner, is the keynote of the whole design. Foliated and elaborated, moulded and corbelled, this constructive element was the joy of the wood-carver, who brought all his artistic energies to bear on its embellishment. The consequence is that the window, in Nepalese buildings, has rarely received more ornate treatment in the history of art."

On plan and in design, the Nepalese temple is similar to those found in the Himalayan districts further west. The plan is ordinarily square, and the ground floor is usually the only part of the structure put to any practical use, the upper floors which may be several in number, being usually " blind storeys." The room on the ground floor is built on a stone or masonry plinth and forms the shrine chamber. The interior is plain and contains nothing but the object, or objects, of worship and a few religious accessories. But outside, the doors and windows are usually lavishly decorated with carved wood and metal work. The walls are built of brick, instead of rubble masonry, and timber, and the roofs are covered with tiles in place of slates or shingles as in the earlier temples of Kulu and Chamba State.

Fig. 16 shows two typical Nepalese temples situated in the Durbar square of the old capital of Patān. The one in the centre is the temple of Bhyrab, that on the left is dedicated to Krishna and has two stone elephants guarding the steps leading up to the entrance, and in the background behind the Krishna temple, is the stone spire of a modern Hindu shrine built in the northern style of Indian architecture. Most of the Nepalese temples are comparatively modern structures, and none of them appears to be earlier than the fifteenth century, so we do not know what the first wooden temples were like, but it is reasonable to suppose that these were similar in style to those of Kulu and Chamba, and that the Newars being a far more artistic race than the inhabitants of the western Himalayas, soon improved on the original design and developed the style on their own lines. However, the Nepalese temples still retain many architectural features which clearly indicate their source of origin. For instance, although the three temples shown in Fig. 16 are all Hindu shrines, all of them possess certain features which are purely Buddhist in origin. The front of each roof of the Bhyrab temple is provided with a group of copper gilt finials. In shape these finials are merely miniature votive stūpas like those shown in Fig. 7.* The group of finials surmounting the uppermost roof is over-shadowed by a large copper-gilt umbrella, also shaped like a mediæval Buddhist stūpa. Metal umbrellas of this shape are common in Nepal and may be seen overhanging the temple idols and also above portrait statues of former rulers of the State set up in the Durbar squares of Patān and Bhatgaon. The finials adorning the principal gateways are also in the same Buddhist style. It will be noticed that the summit of the Krishna temple is decorated in a similar manner. Again, the tall spire of the modern Hindu shrine at the back of the Krishna temple represents the same ornament reproduced in stone.

The doors and windows of the Bhyrab temple are richly carved and the entrance is guarded by two fearsome bronze leogryphs. Above the doorway is a handsome wooden balcony the bottom of which is decorated with a wooden fringe like those found in Kulu. The eaves boards have the same perforated cruciform design as that found carved on the wooden windows of the Kulu temples (Figs. 8 and 9), but instead of the wooden fringe, the underside of the eaves is decorated with a row of brassbells with very long tongues, the latter shaped like the leaves of the Bodhi tree, as we noticed in the ***khuda's*** umbrella (Fig. 2). The custom of using bells in this manner is a very ancient one and first appears on the rail coping of the Bharhut stūpa.

The heavy overhanging wooden roofs of the original design have been retained, and they are still supported by roof struts. But how different the latter are from those found in the Kulu temples. They have now become one of the most highly ornamental features of the style.

The Krishna temple has only two roofs instead of three, otherwise, on plan and in style it is similar to the Bhyrab temple. The single-roofed wooden pavilion or mandapa in front of the Krishna temple is used in connection with the latter at festival times, when the image of Krishna is taken in procession, and other ceremonies are performed.

The town of Pashpatti illustrated in Fig. 17 is a picturesque collection of temples and shrines of all ages, situated on the banks of Baghmatti river, and about three miles north-east of Katmandu, the capital of Nepal. It is a famous place of pilgrimage and the Benares of Nepal. So holy is the place that the one great desire of the Nepali Hindu is to gasp out his last breath on the steps of the " ghat," with his feet lapped by the sacred stream. Most of the buildings are grouped on the western bank of the river, which is crossed by two picturesque bridges. They consist mainly of courts and squares arranged at different

* Fig. 7 of First Paper, on "The Development of the Stūpa," published in the R.I.B.A. JOURNAL of 22 December 1928.

levels, and connected by numerous flights of stone steps. Picturesque pyramidal roofs cover the temples, the most important one rising above the others into a brilliant effect of carved wood-work and gold against the blue sky and distant snows. The temple courts are filled with a variety of images and shrines of different periods, while in front of the chief temple is a huge copper gilt image of the sacred bull Nandi, the vehicle of Siva. The wooden temples are in the same style as those at Patān and need no description here, but the row of masonry shrines shown in the fore-

FIG. 17.—GENERAL VIEW OF PASHPATTI, NEPAL

ground of Fig. 17, are both interesting and instructive, as we have here a conventionalised model of a wooden pagoda-roofed shrine executed in brick and plaster. If we compare this type of brick temple with Hidimbā's wooden shrine (Fig. 6), it becomes quite obvious how the style originated. In fact some of the wooden pagodas shown on the opposite bank of the river (Fig. 17) are quite good enough for this purpose. Owing to the nature of brick and plaster, it was impossible to reproduce the heavy overhanging wooden roofs faithfully in this material, but nevertheless, they are clearly indicated, and the uppermost roof is designed to represent a bell-shaped umbrella ornament crowned with a copper gilt finial. The finials are missing, but their style may be seen from those adorning the little shrines on the opposite bank. This style of temple usually built of stone, is not peculiar to Nepal, but is common in most parts of India where Buddhism or Jainism once flourished. It must be remembered that the style of the monuments erected by the followers of these two creeds in early times was the same in both cases, the only difference being in the nature of the image enshrined within the temple. The Jains paid just as much attention to the *chhattrāvali* or umbrella ornament as the Buddhists and reproduced it in some form or other in every temple they built, and always placed a double or triple-canopied umbrella over the heads of the images of their numerous saints.

Prior to the sixth century A.D., Japan was a comparatively uncivilised country and the religion of the people was a primitive cult of the dead, of which the modern Shinto is a somewhat artificial revival. But, in the

seventh century, at the instigation of Prince Shotoku, Buddhist priests, builders and scholars arrived from Korea. Nara became the capital, and in a few years the Koreans founded the famous monastery of Horiuji, an historical event which marks the birth of Japan as a civilised power.

The Horiuji monastery is a very large one, and forms a good example of a mediæval Buddhist monastery, because the style of the original work seems to have been carefully retained in all subsequent rebuilding, and although, all the subordinate structures are only a few centuries old, they are, in all probability, perfectly reliable models of early Korean work. The earliest and most important buildings in the group are shown in Fig. 18, and consist of a fine double-storeyed gateway, an oblong temple or *kondo*, and a four-storeyed pagoda. These buildings are of wood, and built in the Korean style. The gateway stands just as it was first built, but the verandahs running round the ground floors of the *kondo* and the pagoda date only from the seventeenth century, and are to be regretted as they spoil the original graceful proportions of these two buildings. However, in spite of these additions, the wonderful grace and refinement of the work compel the most profound admiration. These three buildings form but a small part of the enormous monastery of Horiuji, but they are the only ones that unquestionably date from the seventh century. As in the Himalayan examples, the Japanese wooden pagodas are built on a raised masonry plinth from 4 to 6 feet above the ground and provided with a flight of stone steps in front, or on each of the four sides of the terrace. As usual, the room on the ground floor is the only portion of the structure put to any practical use, the upper galleries being merely "blind storeys," and purely ornamental. Running through the centre of the Horiuji pagoda, from floor to finial, is a mighty wooden staff or beam, 100 feet in height, 3 feet in thickness at its base, and tapering to 9 inches at the top. The five superimposed projecting wooden roofs are constructed round this staff in the same manner as the canopies of a *chhattrāvali* are grouped round the *yashti*, or umbrella staff. The base of the staff rests on the stone floor of the shrine chamber, and is provided with a tenon which fits into a socket hole cut in the stone floor so as to keep it in position. The top of the pole forms the lofty finial of the structure, and is ornamented with nine superimposed plain metal rings or *chattas*, and crowned by a conventionalised umbrella ornament of the same material. Each copper gilt ring is decorated with four bells, one on each side and they diminish in size as they approach the top. The umbrella finial is a larger and more elaborate affair than the nine simple *chattas* below it, because this crowning member represents the highest Heaven, the abode of Adi Buddha, just as we noticed in the *chhattrāvali* adorning the Shambu-Nāth stūpa in Nepal (Fig. 7).*

Like the Himalayan temples, the ridge beams supporting the projecting roofs, are decorated with bells, and the roofs are covered with tiles. In some of the more important temples and buildings in Japan, the tile work has been replaced by wooden tiles and ter-

FIG. 19.—YAKUSHIJI PAGODA, JAPAN

minals covered with thick copper plates, a custom found also in Malabar and Ceylon.

Near the ancient city of Nara stands the picturesque temple of Yakushiji, erected in 680 A.D. (Fig. 19). Here we have a development of the Horiuji pagoda, and in all probability, a work which represents one of the first Buddhist temples built by a Japanese architect. Its loftiness and daring originality is in marked contrast to the sombre serenity of the Korean model. Here too, for the first time, we find the roof struts and double brackets which subsequently became such

* Fig. 7 of First Paper on "The Development of the Stūpa."

characteristic features of Japanese architecture. The umbrella finial of the Yakushiji temple is an exact copy of the one crowning the Horiuji pagoda. In his account of India in the seventh century, Hiuen Tsiang expressly states that many of the famous Buddhist monuments which he visited were very lofty buildings, and all of them appear to have been surmounted by a *chhattrāvali* ornament of some kind. Some of the buildings he describes as being " several storeys in height, and crowned with copper-gilt *chattas* (umbrellas)." In this case, it is obvious that he is not referring to a stūpa, but to a monastery or a temple built in the pagoda style, and presumably, decorated with an umbrella finial. That finials of this type were common enough in India at the time of his visit is proved by the number of existing stone models portraying them. A good example of this is shown in Fig. 17,* a stone memorial stūpa from Sarnāth, near Benares. Plenty of similar examples also exist at Bodh-Gaya, and around the Shambu-Nāth stūpa in Nepal (Fig. 7).† It will be noticed that the conventionalised stone spire surmounting the *tee* of the Sarnath stupa is about as true a copy of the Korean *chhattrāvali* as is possible in stone. The nine super-imposed metal rings decorated with bells on each of the four sides, and the dome-shaped umbrella canopy on the summit are all faithfully reproduced. It seems that in the seventh century, this was the usual type of *chhattrāvali* for all Buddhist monuments in India, whether stūpas, temples, or monasteries, and hence the reason why they are found in the earliest Buddhist monuments of China and Japan.

In tracing the development of the stūpa we have seen how the *chhattrāvali*, a simple architectural ornament consisting of a few super-imposed umbrellas only a few feet high, finally became transformed into a lofty pyramidal tower reaching to a height of a hundred feet or more, the stūpa itself almost disappearing. There seems little doubt that the same thing happened with regard to the wooden temples of the Himalayas after the advent of Buddhism in these remote regions. At first, the builders were satisfied with a single umbrella canopy over the shrine chamber as in the Dalas example (Fig. 3), but as time went on and the building arts progressed, a desire was felt to make the temples more imposing by increasing their height and beautifying them with carved wood work. So additional canopies were added to the *chhattrāvali*, and more attention was paid to the ornamentation of the pillars, doors and windows, until at last, we find the temple assuming the form of a many-roofed pagoda, the *chhattrāvali* dominating every other architectural feature of the building, just as it eventually did in the case of the stūpa.

HIMALAYAN ARCHITECTURE.

Author's Note.

Since writing the article on " Himalayan Architecture," I have found in Professor Beal's *Buddhist Records of the Western World*, translated from the Chinese of Hiuen Tsiang (A.D. 629), several important references which should have been included in my article, as they appear to me to prove conclusively that the so-called " Chinese Pagoda " did originate in India as I have endeavoured to show.

The Buddhist literature of China contains, amongst other valuable works, the records of the travels of certain Chinese Buddhist pilgrims who visited India in the early centuries of the Christian era. These records embody the testimony of independent eye-witnesses regarding the facts related in them, and having been faithfully preserved and allotted a place among the sacred books of China, their evidence may be regarded as thoroughly trustworthy. The first Chinese traveller whose name and writings have come down to us is Fa-Hian (A.D. 400). The next is Sung-Yun (A.D. 518) and, lastly, the illustrious pilgrim Hiuen Tsiang (A.D. 629).

In the following note, I have frequently had to use the word " pagoda," and as the term is a very ambiguous one, since it may mean either a Buddhist tomb, temple or monastery ; or even a Jain, Hindu or Shinto temple, all of which buildings belong to totally different styles of Eastern architecture ; it seems necessary to explain here exactly what I mean by this word. My definition of a " pagoda " is as follows :—" A Buddhist temple, square on plan with a shrine chamber on the ground floor standing on a raised masonry basement with a flight of stone steps leading up to the entrance. Above the shrine, the walls of which are usually built of brick, is a storeyed tower mainly of wooden construction with widely projecting eaves which diminish in size as they reach the top of the building. The latter is surmounted by a metal umbrella finial known as a *chhattravali*, or a *hti* (*tee*). This ornament is supposed to represent the highest heaven of Buddhist cosmography."

The *tee* was not peculiar to Buddhist temples, it was the usual crowning ornament of the stūpas, but as the latter were built of brick and plaster, or hewn out of the natural rock, the *tee* was generally executed in the same material. The latter brick and plaster stūpas of Burma and Siam, however, are usually surmounted by a very elaborate metal *tee*, a far more imposing affair than the simple iron rod decorated with a number of superimposed copper gilt *chattas* (umbrellas), which prevailed in India in early times.

And now, after this digression, I will pass on to the references from the writings of the Chinese Buddhist travellers mentioned above.

The pilgrim Sung-Yun (A.D. 518) has left us a good

* Fig. 17 of First Paper on Development of the Stūpa.

† Fig. 7 of First Paper on Development of the Stūpa.

description of a wooden pagoda which he saw in Peshāwar, the ancient capital of Gandhara, which was built by King Kanishka (first century A.D.), and which he calls the Tsioh-li Feou-thou (a pagoda with a surmounting pole.)* He relates how Kanishka, on seeing some children building a toy stūpa out of cows' dung, enquired what they were doing. The record states :—" One of the children raising himself in the air and turning towards the king, repeated a verse (in praise of Buddha and the king)." The king, much surprised at this miraculous event, built a pagoda over the spot. " Throughout the building he used carved wood ; he constructed stairs to lead to the top. The roof consisted of every kind of wood. Altogether there were thirteen storeys ; above which there was an iron rod, thirty feet high, decorated with thirteen (superimposed) gilded *chattas*. The total height was 700 feet." It is clear from this description that the pilgrim is describing a wooden pagoda like those still existing in Japan. He continues :—" Of all the pagodas of the Western world, this one is by far the first (in size and importance)." Hwei-Sang, a brother pilgrim who accompanied Sung-Yun to Peshāwar, was so impressed by the beauty of the Tsioh-li pagoda that he " employed a skilful artist to depict on copper the Tsioh-li pagoda and also the four principal stupas of Sākyamuni." These drawings, or engravings on copper, were doubtless taken back to China, where, in all probability, they served as models for some of the first Buddhist monuments erected in that country. In fact, the Chinese records expressly mention that† " in the year A.D. 652, Hiuen-Tsiang caused a pagoda (*Feou-to*) to be constructed at the southern gate of the Hong-fuh temple, in which he finally deposited his sacred books and images for safety. The total height of this structure was 180 feet. It was built after the model of the Indian pagodas, and had five storeys, surmounted by a cupola." In all probability, the world cupola should be translated as *chhattravalī*.

Sung-Yun tells us that " The Tsioh-li pagoda, since its erection, has been three times destroyed by lightning, but the kings of the country have each time restored it." No doubt the metal *chhattravalī* was the cause of this. He also states that to the south of the Tsioh-li pagoda was a round tower (stūpa) 27 feet high. Hiuen Tsiang, who visited India about a hundred years later, also mentions both of these monuments.‡ He repeats the legend about Kanishka and the children, etc., and says the pagoda built by Kanishka was several storeys in height and surmounted by a *chhattravalī*. But it is clear that both buildings were in ruins when he saw them, as further on he says :—" These two towers are still visible." He would not have made this remark if the pagoda and the stūpa had been standing in good preservation. At the beginning of the chapter, describing the Gandhara country, he says that at the time of his visit almost all the Buddhist buildings were in ruins, and that the heretics, as he calls them, had ousted the Buddhists from their ancient kingdom.

Then we have Fa-Hian's description of the famous Jētavana monastery as it appeared at the beginning of the fifth century A.D. He says :—" The Jētavana *vihāra* originally had seven storeys. The monarchs of the surrounding countries and the people vied with each other in presenting religious offerings at this spot. They decked the place with flags and silken canopies (umbrellas) ; they offered flowers and incense, whilst the lamps shone out all night long. A rat gnawing at the wick of one of the lamps caused it to set fire to one of the canopies, and this resulted in a general conflagration and the entire destruction of the seven storeys of the *vihāra*. This account indicates that the superstructure was of timber construction, and that the monastery was built in the " Pagoda style." Fa-Hian says the central shrine contained a very ancient sandal-wood image of the Buddha in a sitting posture, and that this image escaped destruction by fire. This was probably due to the walls of the shrine chamber, which was on the ground floor, being of brick or stone, as was usually the case with these wooden pagodas. With regard to this wooden image, he says, " This image was the very first made of all the figures of Buddha, is the one which all subsequent ages have followed as a model." He is, of course, merely repeating the local tradition he heard concerning it, but, nevertheless, it is probable that there is a good deal of truth in his statement, as the image in question was undoubtedly a very ancient one, and belonging as it did to one of the oldest and most important monasteries in India, the image may have been frequently copied in later times, as the oldest and most orthodox portrait figure of the Buddha, and thus helped to fix the type of Buddha image which from about A.D. 500 onwards became universal, and was introduced into every country where Buddhism took root. In early times wooden images, not only of Buddha but of Hindu deities also, seem to have been common in India. We are told that when Hiuen Tsiang returned to China in A.D. 645 he not only brought back with him a lot of Buddhist books and manuscripts, but also six images of Buddha. Of these, two were of gold, one of silver, and three of sandal-wood. It is extremely probable that one of the sandal-wood images was a copy of the Jētavana figure and may have served as a model in China.

Again, Hiuen Tsiang (A.D. 629) has left us a description of the Tiladaka monastery in the ancient kingdom of Magadha, the central shrine of which seems to have been constructed and designed on exactly the same lines as a typical Nepalese temple. He says, §" In the road facing the middle gate there are three *vihāras*, above each of which is a *chhattravalī*, from which bells are suspended in the air, below they are constructed storey above storey, from the bottom to the top. They (the storeys) are surrounded by railings, and the doors, windows, pillars, beams, and staircases are all carved (and covered) with gilt copper in relief, the intervals being highly decorated. The central *vihāra* contains a standing image of Buddha about thirty feet high. On the left is an image of (the goddess) Tāra, and on the right one of Avalokitesvara Bōdhisattva. Each of these images is made of metallic stone." The word *vihāra* really means a monastery, but as every *vihāra* of any importance was provided with a temple enshrining an image of Buddha, the pilgrims use the word to denote both types of buildings,

* Beal's *Buddhist Records of the Western World*, Vol. I, p. civ.
† Beal's Life of *Hiuen-Tsiang*, p. 216.
‡ *Buddhist Records of the Western World*, Book II, p. 100.
§ *Buddhist Records of the Western World*, Book VIII, p. 103.

but they seem to apply the word only to storeyed buildings. For instance, Hiuen Tsiang described the great brick temple at Bōdh Gāya as a *vihāra*. But it is not and never was a monastery. However, it is outwardly designed, in a conventional manner, to represent one, and, observing this, Hiuen Tsiang calls it a *vihāra*.

Lastly, in a note on the different kinds of buildings he noticed in the towns of India,* Hiuen Tsiang speaks very highly of the design and construction of the monastic establishments, or *sanghāramas*, as they are called. He says :—" The *Sanghāramas* are constructed with extraordinary skill. A three-storeyed tower is erected at each of the four angles. The beams and the projecting heads are carved with great skill in different shapes. The doors, windows, and the low walls are painted profusely ; the monks' cells are ornamented within but plain on the outside. In the centre of the building is a lofty hall. There are various storeyed chambers and turrets of different heights and shape, without any fixed rule. The doors open towards the east ; the royal throne also faces the east." The references to the carved beam heads and painted doors and windows, and the fact that the towers were several storeys in height, indicate that the superstructures were usually built of wood in the " Pagoda style."

I venture to think the reader will agree with me that there is no shadow of doubt as to what " *style of building* " the pilgrims are describing, as there is only one style of Eastern architecture which answers to their descriptions, descriptions which were written at different periods and quite independently of each other. It is not a case of one writer copying from the previous work of another, as we so often find in the works of Greek and Roman historians who have left us accounts of ancient India. If Fa-Hian's statement concerning the date of the Tsioh-li pagoda is correct, and there is no reason to doubt it, then Buddhist temples, similar in style and construction to the Horiuji Pagoda in Japan, existed in India as early as the first century A.D., and possibly before that date. Whereas, according to the Buddhist records of China they were unknown in that country before the seventh century A.D. This in itself is sufficient proof that the so-called " pagoda," like the stupa and the Buddha image, found its way into China and Japan at a much later date, in fact, not until Buddhism had become firmly established in those countries, for the very good reason that prior to that date there was no demand or use for such buildings. Although Buddhist books began to be imported into China as early as 200 A.D., and the Chinese pilgrims whose names are cited above may not have been the first or only converts to visit India, the fact remains, that before Hiuen Tsiang's return to China (645 A.D.) Buddhist art or architecture does not appear to have had any influence whatever in that country. In fact, the Chinese records expressly state that such was the case. So that ends the matter, and the mystery of the origin of " Chinese Pagoda " may now be regarded as settled, once and for all time.

A. H. Longhurst.
Archæological Survey of India.

Correspondence

MR. JOHN KEPPIE'S PENCIL DRAWINGS.

6 *Pembroke Gardens,*
Kensington,
W.8.
28 *February*, 1930.

Dear Sir,—The drawings by Mr. Keppie, of which you gave reproductions in the Journal† of the R.I.B.A., are remarkable both for skill and beauty. Can you tell me where the originals are, and whether there are other similar drawings of his (particularly in Fife, of East Lothian) visible or accessible elsewhere ?

Yours faithfully,
J. W. Mackail
(Hon. Associate).

DINNER TO MR. ROBERT ATKINSON [*F.*].

It is interesting to hear that it has been decided to hold a dinner early in April to Mr. Robert Atkinson [*F.*], to commemorate his position as Director of Education at the Architectural Association School, after having been actively connected with it for 16 years, first as Principal and then as Director, and the great work which he has accomplished for architectural education generally. It is proposed to invite a number of distinguished people to attend.

In order to ascertain approximately the number of old students and others likely to attend, so that adequate accommodation can be secured, the Secretary of the A.A. has sent out a preliminary notice stating that the actual date will be fixed when sufficient replies have been received to make it possible to ascertain the number likely to attend. It is proposed that tickets shall not cost more than 10s. each.

It is also proposed to publish, by subscription, a volume of works by Robert Atkinson, which will include not only drawings and photographs of finished buildings, but also preliminary sketches and possibly colour studies. Full particulars of which will be issued later.

Application to be made to the Secretary of the Association, 34–6 Bedford Square, W.C.

ILLNESS OF MR. W. J. LOCKE.

Old members of the Royal Institute will have recently seen announced with great regret the serious illness of Mr. W. J. Locke, who was Secretary of the R.I.B.A. from 1897 to 1907. During his Secretaryship Mr. Locke won the affection and regard of the many members with whom he came into daily contact and who will earnestly hope for his speedy and complete recovery.

* *Buddhist Records of the Western World.* Book II, p. 73.
† *Vol.* 37, *No.* 8, 22 *February* 1930. The drawings were lent only for the purpose of reproduction, and were returned to Mr. Keppie.—Ed.

Department of Scientific and Industrial Research

Building Research

THE CORROSION OF STEEL BY BREEZE AND CLINKER CONCRETES

The Building Research Station has, within the past year or two, published three reports on the use of slag, breeze and clinker as aggregate in concrete (Special Report No. 10, Bulletin No. 5 and Technical Paper No. 7). These reports, however, were concerned only with the " soundness " of these materials and with their suitability for incorporation in concrete mixes quite apart from corrosive tendencies. The reason for certain types of failure was elucidated and simple tests were described whereby it could be predetermined whether or not disintegration, cracking and/or excessive volume changes in the concrete product were likely to result from the use of a particular breeze or clinker.

A more recent report of the Building Research Station, now in the press, deals with the corrosive properties of breeze and clinker and therefore applies particularly to reinforced concrete work.

Investigations were made of the corrosive powers of five samples of breeze or clinker. The sulphur contents ranged from 0·24 per cent. to 1·62 per cent., and in physical properties the samples varied from a dense, vitrified clinker at one extreme, through samples which would be described as " breeze," containing a good deal of coke, to a very inferior aggregate, consisting of the clinker from a refuse destructor, comprising coke, partially fused glass, fragments of pottery and the variety of substances which would be expected in such a material. These aggregates, made into mortars with Portland cement, were tested in comparison with a mortar made of Portland cement and pure quartz sand, as a standard of corrosive power.

Four series of tests were made in various ways. The results were very consistent and showed that with increasing sulphur content of the aggregates the mortars became more and more corrosive. When the mortars high in sulphur were placed on steel plates and moistened, rusting commenced in a few hours, while sand mortars caused no rusting.

In one series of tests the dried mortars were crushed, packed around steel plates and then placed in an atmosphere of moist air ; there was no addition of liquid water and the samples were under such conditions that there was no condensation in the ordinary sense. All the mortars, except those in which the sand and the clinker aggregate containing only 0·24 per cent. of sulphur were used, caused rusting. Possibly the fact that some breeze aggregates are capable of absorbing a good deal of moisture from the air had something to do with this, but, in any case, the experiment shows how steel in concrete containing breeze may rust seriously even under apparently " dry " conditions. The fourth series of tests was made by embedding plates of steel in concrete containing the aggregates, allowing an inch of cover all round. The blocks were placed out of doors in the open for six weeks. When the blocks were then broken open the steel from the block made with destructor clinker was covered with rust. Even the concrete made with the best clinker of all (far better than can usually be obtained) had rusted 8 per cent. of the area of the steel plate embedded in it.

Further tests on the permeability of the mixtures showed that permeability had little to do with corrosion, for when sand was substituted for the finer portion of the breeze it was found that the permeability of the blocks was increased, due to the sand used not being equivalent in size to the dust removed. Yet the corrosive power was reduced, evidently due to the substitution of some inert material for some of the injurious breeze.

The main practical conclusion to be drawn from the work is that coal residues such as breeze and clinker must be regarded as definitely undesirable ingredients in concretes reinforced with ordinary steel or in contact with steel.

The only exception is when the sulphur and combustible contents are within certain limits. The limits which it would be necessary to impose would exclude all but an extremely small proportion of even the best qualities of clinker. Moreover, constant laboratory testing of batches would be required. In these circumstances there would be little or no economical advantage in using these aggregates.

In the interests of absolute safety it would seem desirable to abandon altogether the use of breeze and clinker as aggregates for concrete in contact with steel.

DISCOLORATION OF DISTEMPER.

A failure in the use of distemper may be of interest to members. The material used was a standard buff colour made by a well-known firm, which the writer has specified successfully for years, and is on the walls of several chemical laboratories. In this instance it was applied to laboratory walls, and began to turn black in a fortnight. The makers took the matter up and had an analysis made of the material but were unable to admit that there was anything wrong with it, but they contributed to the cost of removal and the walls were then painted. The moral is that when walls are decorated in situations liable to corrosive gases it is desirable to inform the makers of material specified and obtain from them some guarantee. All materials containing lead should be avoided in decorating laboratories, as the least trace of lead leads to blackening in the presence of certain gases present at times in the atmosphere of any room devoted to chemical experiments.

ALAN E. MUNBY [*F.*].

Allied Societies

(The attention of Members of the Allied Societies is particularly called to this page)

THE BERKS, BUCKS AND OXON ARCHITECTURAL ASSOCIATION.

The eighth annual dinner of the Berks, Bucks and Oxon Architectural Association was held in the Small Town Hall, Reading, on 20 February. The President, Mr. H. Hutt, F.R.I.B.A., was in the chair, and there was a large and representative gathering. The guests of the Association were: Sir Banister Fletcher (President R.I.B.A.), Lady Fletcher, Mr. H. J. Gale, F.S.I. (Chairman of the Berks, Bucks and Oxon Branch of the Surveyors' Institution), Dr. S. Hastings, M.P., Lieut.-Col. P. A. Hopkins, O.B.E., Mr. T. A. Lloyd (President of the South Wales Institute of Architects), Mr. Ian MacAlister (Secretary R.I.B.A.), Mr. A. L. Roberts, F.R.I.B.A. (Hon. Secretary of the Hampshire and Isle of Wight Architectural Association), Mr. F. T. Robinson (President of the Reading and District Building Trades Employers' Association), and Dr. T. Franklin Sibly, D.Sc. (Vice-Chancellor of the University of Reading).

Mr. R. A. Rix, proposing "The Town and University of Reading," said they had a town with ancient traditions and a town with the youngest university in the country spreading out in its efforts and asking for £200,000 to further its objects. Those two combined together the dreams of old age and the effort of youth. Reading was the home of the Society of Architects and the University their actual headquarters. The Society felt particularly grateful to the town and the University, and if in any possible way they could help the town of Reading to further its efforts in regard to housing the people, making new streets and the preservation of rural England they could depend upon architects to do what they could in that direction.

Dr. Somerville Hastings, M.P., said that Reading had some fine pieces of architecture, and he was glad that the town was taking an interest in old monuments and had rescued from the hands of vandals the beautiful Watlington House. Speaking of housing schemes, Dr. Hastings said he knew that faults could be found with some of the houses, but he also knew the difficulties that had to be contended with. He had seen some of the housing schemes in different places, and it seemed to him that Reading's houses would contrast very well. The new houses on the Norcot estate were in particular on a beautiful site.

Dr. T. Franklin Sibly, who also responded to the toast, said he felt it to be a happy circumstance that at his first appearance as the guest of that branch Mr. Hutt should be in the chair. Mr. Hutt and his partners, and particularly the late Mr. Charles Smith, was closely associated with the University of Reading, and he hoped that association would long continue. He also hoped the association between the branch and the university would continue and that they might feel they were working for a common cause. He felt that the work of the university which he now represented and the universities he had worked in all his life—excluding the older universities of Oxford, Cambridge and of Scotland—had a task which was singularly like the task of architects. They were seats of learning and they were also institutions with a definite civic obligation. They had to find the means of rendering due service on the one hand to learning and on the other hand they had to serve the practical needs of the work-aday world.

Mr. H. S. Rogers, proposing "The R.I.B.A. and Its Allied Societies," said the Royal Institute was virtually recognised as the guide in the profession. Its daughter societies spread over the whole globe, and in the 94th year of its existence those affiliated societies numbered precisely 94. He coupled with the toasts the names of Sir Banister Fletcher and Mr. Harry Hutt, to whom he paid tribute for their work for the Royal Institute.

Sir Banister Fletcher, responding to the toast, said that when he thought of the great art they exercised his mind went back through the ages and dwelt on a subject which he had much at heart, namely, the history of their craft. In Reading they had an old Abbey, but he thought the progress of events and extraordinary prosperity of the town had caused most of their older buildings to be carried away. That was, of course, often due to the march of progress. It seemed to him that Reading was a town which had no very great number of old buildings, but the surroundings of the district in which they practised were amongst the most beautiful in England, and it therefore behoved architects by means of town planning schemes to keep and preserve what they had left. Architects were doing a good deal of work without fee and reward, and they were willing to do more in regard to the panels of architects which were being set up in all parts of the country. Those panels were willing to give free advice on matters connected with the wellbeing of the country in regard to its architectural layout. Continuing, Sir Banister said the Royal Institute felt more and more the importance of the Allied Societies, who were really the backbone of the Institute and carried the traditions of their craft to the high standard of professional etiquette into all parts of the country. They existed, he concluded, for the advancement not of architects, but of architecture, and in doing so they put their ideals on a high plane.

Mr. Harry Hutt, after paying tribute to the work of the Honorary Secretary (Mr. E. S. Smith), said he was convinced that the Allied Societies were absolutely essential, not only for the benefit they gave to local districts, but for the benefit they were to the Institute itself. He would like to see every member of an Allied Society when his turn came to be prepared to accept office and carry on the work with no other object than that of the public good.

Lieut.-Colonel P. A. Hopkins proposed "The Building Trades."

Mr. F. T. Robinson, President of the Reading and District Building Trades Employers' Association, in response, referred to the formation of building and architects' panels. There was, he said, a good feeling existing between employers and operatives in the town, and he believed, in fact, that never before was there such a spirit of goodwill as at the present time. The building industry had set an example to other industries in the way it had settled its industrial problems generally. The war and the following years had not tended to produce the best in architecture or buildings. Architects and builders were not in any way to blame for that. The trouble was that so-called working-class houses had to be built in the cheapest way and in the shortest possible time. From an artistic and constructional point of view all present deplored the results which they saw up and down the country. He trusted, however, they had in some measure caught up with the deficiency created during the war period, and would soon be able to hand down to posterity buildings which would prove worthy and be of at least some artistic merit and stand the test of time.

Mr. T. T. Cumming proposed the health of "The Visitors," and the toast was acknowledged by Mr. J. F. Richardson.

THE BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The Birmingham Architectural Association held their annual dinner on Friday, 21 February.

The company included the Lord Mayor (Alderman M. L.

Lancaster) and the Lady Mayoress, the City Surveyor (Mr. H. H. Humphries), Mr. Sydney D. Kitson (the Hon. Secretary of the Institute), Mr. H. V. Lanchester, Judge Tebbs, Mr. L. P. Gamgee (Professor of Surgery, Birmingham University), Mr. George Huggins (President, Birmingham Law Society), Mr. Charles H. Sitch, M.P., Mr. G. C. Lawrence (President of the Allied Societies' Conference) and Mr. Ian MacAlister (Secretary R.I.B.A.).

The Royal Institute of British Architects, said Mr. A. T. Butler, who presided, had added enormously to the status of the architect, and had done much to advance the study of architecture. It had a membership of over 10,000, including Students and Probationers, and not including the members in the Allied Societies. In 1909 the Town Planning Act was passed and the groundwork was provided by the Institute, whose great conference in that year was of paramount importance to the nation.

In proposing "The City of Birmingham," Judge Tebbs said that in deciding possession cases he had to inspect a number of houses in the Black Country, and he must say that the way in which some of the people were housed was a disgrace to civilisation. Such a state not only affected the health of the people, but it was a loss to the community owing to the increased expense incurred in the hospitals. In the past, Birmingham had led the way in municipal progress, and he was sure the Lord Mayor would go down in history if he could create a campaign for effectively tackling the slum question.

In acknowledging the toast, the Lord Mayor said he often wondered whether architects were proud of the tens of thousands of houses that were being built for the working classes of the country. (Cries of "No, we don't build them.") With regard to the slum question, he could tell Judge Tebbs that Birmingham was building twice as many houses as any other city in the country, and yet the demand for accommodation was still high. It was no good pulling down thousands of the back-to-back houses until they could find houses for the people elsewhere. It was a great and serious problem, and he was sure the members of the Association could be of great assistance to them.

"The Birmingham Association" was proposed by Mr. H. V. Lanchester (the winner of the competition for the premier design of the new Birmingham hospital), who asked what was before them. He would call them the organiser-engineer-architect. They were becoming responsible to a greater extent for the development of communal life on a large scale, and for the material demands of social welfare and economic services. The opportunities before them were great.

The toast was acknowledged by Mr. H. G. Wicks, vice-president of the Association.

THE LEICESTER AND LEICESTERSHIRE SOCIETY OF ARCHITECTS.

Over 100 members of the Society attended an At Home held in the Edward Wood Hall, Leicester, given by Mr. Walter Brand, the President, and his daughter on Friday, 7 February, 1930.

One of the features of the evening was the presentation of a Potted Pantomime, "The House that Jack Built," the artists being Messrs. E. D. O'Connor, G. A. Cope, T. W. Haird, S. H. Stableford, M. R. Longmill, G. F. Owen, C. F. M. Keay, E. C. Mount, and A. E. Smith.

Others who assisted in entertaining were The Clef Quartette, Mr. G. H. Groocock, Mr. Reg. Bocking, Mrs. K. Bocking, Miss Monica Gaskell, Mrs. M. G. Anderson and Miss Ethel Chawner.

THE SOUTH WALES INSTITUTE OF ARCHITECTS. CENTRAL (CARDIFF) BRANCH.

On Wednesday, 12 February, a party of over 30 members of the School of Architecture Club, which is associated with the South Wales Institute of Architects, Central (Cardiff) Branch and the Welsh School of Architecture at the Cardiff Technical College, visited Gloucester and Cheltenham. At Gloucester they were able to inspect the Cathedral and after lunch at the George Inn, Cheltenham, they paid a visit to the Sunningend Works of Messrs. H. H. Martin and Co., Ltd., Cheltenham, where they saw very many specimens of fine craftsmanship completed and in various processes. This work was in the nature of architectural decoration in various materials such as fibrous plaster, hard wood, metal, stone and marble, and showed clearly that where the opportunities arise craftsmanship of a very high standard is still available in this country.

Among those present were Mr. C. J. Bartlett, Chairman of the School of Architecture Club, Mr. H. J. Hughes, Secretary of the School of Architecture Club, Mr. R. H. Winder, M.A., F.R.I.B.A., Mr. Lewis John, M.A., B.Arch., A.R.I.B.A., Messrs. I. W. Richards, J. W. Bishop, J. P. Ward, and C. A. Thatcher, members of the Committee.

Western Branch.

At the eleventh annual general meeting of the Western Branch of the South Wales Institute of Architects, held at the Hotel Metropole, Swansea, the members were entertained to tea by Mr. J. Herbert Jones, F.R.I.B.A., who relinquished the office of Chairman which he had held for the past two years. He was unanimously appointed as Honorary Secretary, an office which he filled for nine years prior to his election as Chairman in 1928.

The new Chairman is Mr. Oliver S. Portsmouth, A.R.I.B.A., and the Treasurer, Mr. G. R. H. Rogers, L.R.I.B.A. Mr. E. E. Morgan, A.R.I.B.A., was appointed Honorary Auditor for the ensuing year.

A unanimous vote of congratulation was accorded to the winners of the Civic Centre Competition, and it was generally agreed that the group of buildings to be erected in Victoria Park (in the opinion of the members the best and only possible site) would admirably uphold the Civic Dignity of the Town.

The following members were elected to serve on the Branch Committee :—

Fellows : Mr. Charles S. Thomas, F.R.I.B.A. ; Mr. Edwin Smith, A.R.I.B.A. (Neath) ; Mr. Edward R. Brown, L.R.I.B.A. ; Mr. J. T. Jones (Neath) ; Mr. H. A. Ellis, F.R.I.B.A.

Associates : C. W. Geddes ; L. W. Devonald.

The officers elected to represent the West Wales Area on the General Council of the South Wales Institute of Architects were :—

Fellows : Mr. J. Herbert Jones, F.R.I.B.A. ; Mr. O. S. Portsmouth, A.R.I.B.A. ; Mr. Charles S. Thomas, F.R.I.B.A. ; Mr. G. R. H. Rogers, L.R.I.B.A. ; Mr. H. A. Ellis, F.R.I.B.A. ; Mr. Edwin Smith, A.R.I.B.A. (Neath).

Associates : C. W. Geddes ; Mr. L. W. Devonald.

The Retiring Chairman (Mr. J. Herbert Jones) then presented the prizes awarded to the successful students in the Annual Studentship Competitions as follows :

Mr. D. Eric Stephens, first prize for the best essay on "The Aesthetic Value of Concrete as a Monumental Building Material." Mr. W. T. Evans (Haverfordwest), first prize for a set of Measured Drawings of St. David's Church, Hubberston, Pem. Mr. Elwyn J. Rees, first prize, and Mr. John Nicholls (Neath) second prize for designs for Combined Electric Railway Station and Bus Centre at Oystermouth.

WEST YORKSHIRE SOCIETY OF ARCHITECTS.

A meeting of the West Yorkshire Society of Architects was held at Leeds on 13 February, under the presidency of Mr. G. H. Foggitt, when an address was given by Mr. Walter M. Keesey on "Print Making and Collecting."

After touching lightly on the history of engraving as a means

of pictorial representation, Mr. Keesey went on to explain the reasons for the adoption of particular methods, and also the various processes employed. Etching, he said was an attractive art, appealing especially to architects, and very suitable for the rendering of surfaces and textures of building materials. The greatest etchers were fond of introducing buildings into their compositions, as witness Piranisi's liking for architectural motives, and later as seen in the work of Alex. Haigh and Walcot.

Print collecting should appeal to them not only on account of its popularity, but because architects should be connoisseurs of decorative objects in general, so as to be able to advise their clients. There was also the chance that a judicious collection of prints if acquired at reasonable cost, might eventually bring a good return.

The lecturer having shown upon the screen examples of the work of a number of well-known artists, was accorded a warm vote of thanks, on the motion of Mr. G. H. Foggitt, seconded by Mr. Norman Culley.

EXHIBITION OF ARCHITECTS' WORKING DRAWINGS.

An Exhibition of Architects' Working Drawings will be held in the R.I.B.A. Galleries from Thursday 20 March to Saturday 29 March 1930, inclusive.

The Exhibition will be open daily between the hours of 10 a.m. and 8 p.m. (Saturday 5 p.m.) and will include drawings lent by :—

Mr. W. A. Forsyth
(University College, Hull,
New Boarding House for Rugby School).
Mr. Edward Maufe,
(Trinity College, Cambridge).
Professor A. E. Richardson, F.S.A.
(Mothercraft Training Hostel, Highgate Hill, N.)
Messrs. Watson, Salmond and Gray
(Extensions to Municipal Buildings, Glasgow).
Dr. P. S. Worthington, F.S.A.
(Masonic Temple, Manchester, etc.)

The exhibition is intended primarily for students of Architecture ; they will be able to examine the drawings that a practising Architect hands to a contractor, and thus will be afforded an insight into the methods adopted in a modern Architect's office.

A Special Students' Evening will be held at the Exhibition on Thursday 20 March, 1930, at 8 p.m. All students are cordially invited to attend. It is hoped that the architects (or their representatives) who have lent exhibits will be present in order to explain the drawings to the students. Refreshments will be provided and no cards of admission are required.

MODERN ARCHITECTURE.

By Bruno Taut.

We have to correct an error in our review of this volume in our issue of 25 January, where the reviewer states : " The Studio . . . has published a translation of Bruno Taut's book on Modern Architecture, which originally appeared in Germany."

This book was commissioned by the Studio and especially written for them last year by Mr. Taut. No German edition of the book existed at the date of publication by the Studio, though they have since sold an edition to a German house.

Obituary

DONALD McKAY STODDART [*F.*].

Donald McKay Stoddart, whom death has carried off with startling suddenness through pneumonia at the early age of 54, was the youngest son of the late James Hastie Stoddart, LL.D., the then distinguished editor of the *Glasgow Herald*. The father's gifts as a writer, both in prose and poetry, were transmuted in the son to a love of the Arts, more especially of architecture, for which he showed an early bent.

Following general education at the High School, he was in due course apprenticed to the firm of Messrs. Honeyman and Keppie, at the same time following the evening course in architecture at the Glasgow School of Art, of which at that period the inspiring director was W. J. Anderson, the well-known author of *Italian Renaissance Architecture*, and part author with Phené Spiers of the *Architecture of Greece and Rome*.

With Honeyman and Keppie he remained for some further time until in 1898 he joined an office companion in a tour through Italy, the young architects' Mecca, returning with a budget of delightful drawings and sketches which show more especially his appreciation for and delicate rendering of detail and colour. Shortly afterwards, about 1890, he became the head of my small staff which, with increasing experience and ability, during my partnership with the late Campbell Douglas, and onwards under myself, he continued to direct until the later years of the War.

Stoddart was always a hard and enthusiastic worker and looked for a like service from those under him. But he had a sincere affection for and interest in the work of " the boys of the back office," not only there but for the School of Architecture, and was quick to recognise and encourage such as showed special ability, with, as the result, a corresponding regard for him on their part.

When called up for service in 1918, the last of the then increased staff to go and the only one to return, being at once beyond the age and from a chest delicacy unfitted for combatant work, he served till the Armistice in France in a Motor Transport Battalion. With demobilisation in prospect, I proposed that he should return as junior partner, an offer which he accepted with enthusiasm, and as such he renewed his close association with and active share in our work until it was ended, after 30 years' companionship, by his untimely death. By nature Stoddart was kindly and sympathetic to a degree, but modest and unassuming. It was probably in great part owing to the latter qualities that he was given so few opportunities for individual work. Some instances of these, mainly competition designs, seemed to lack success owing to a want of boldness in general conception, the proverbial failure to see the wood for the trees. But those works he carried through were characterised by sound design and construction, simple and refined detail and an essential fitness for their purpose.

Elected a Licentiate in 1910, on submission of one or two of these designs, he was passed by the Council to the Fellowship without examination in 1925.

Alexander N. Paterson [*F.*].

PROBATIONERSHIP OF THE R.I.B.A.

EXAMINATIONS RECOGNISED.

Attention is called to the fact that the Council R.I.B.A. have decided to include in the list of examinations recognised for the Probationership R.I.B.A., the Preliminary Examination of the Surveyors' Institution and the Preliminary Examination of the Institution of Civil Engineers.

R.I.B.A. FINAL EXAMINATION THESIS.

Attention is called to the fact that candidates will in future be required to state at the beginning or end of their Theses the sources of their information, giving the titles of the books consulted.

Attention is also called to the fact that Town Planning has been added to the list of alternative subjects, viz. :—

Historical Architecture,
Science as applied to buildings,
Design, including decoration,

—which may be dealt with in a Thesis.

R.I.B.A. INTERMEDIATE EXAMINATION.

IRISH CENTRE.

Belfast will be an additional centre for the R.I.B.A. Intermediate Examination provided that at least five candidates for examination at that centre are forthcoming on each occasion.

THE DISCOLORATION OF WHITE LEAD PAINT ON EXTERNAL WORK.

The Science Standing Committee have been asked by the London Association of Master Decorators to assist them in the investigation of the causes of the discoloration of white lead paint on external work by asking members of the R.I.B.A. who have experienced trouble in this connection to submit particulars of such cases.

It is hoped that members who are able to give any information on the matter will communicate with the Secretary of the London Association of Master Decorators at Avenue Chambers, Vernon Place, Southampton Row, W.C.1.

NEW BUILDING MATERIALS AND PREPARATIONS.

The Science Standing Committee wish to draw attention to the fact that information in the records of the Building Research Station, Garston, Watford, is freely available to any member of the architectural profession, and suggest that architects would be well advised, when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

Notices

THE TENTH GENERAL MEETING.

The Tenth General Meeting (Ordinary) of the Session 1929–30 will be held on Monday, 17 March 1930, at 8.30 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on Monday, 3 March 1930, formally to admit members attending for the first time since their election.

To present the Royal Gold Medal to Mr. Percy Scott Worthington, M.A.Oxon, Litt.D., F.S.A., F.R.I.B.A.

COMPETITION FOR NEW R.I.B.A. BUILDING.

The Council have decided that the design of the new building for the R.I.B.A. shall be the subject of competition open to all members of the R.I.B.A. and its Allied Societies (with the exception of the Jury of Assessors and the Committee placed in the position of Promoters and the members of their staffs).

It has also been decided that the Jury of Assessors shall consist of five architect members of the R.I.B.A. to be selected by the President and approved by the Council. With a view to assisting the President in his selection, members are invited to submit to the Secretary the names of members whom they consider suitable and qualified to serve on the Jury.

THE MISUSE OF POWER BY LOCAL AUTHORITIES.

From time to time cases have been brought before the notice of the Institute where officials of Local Authorities appear to have exceeded the statutory powers with which they are vested.

The Institute would like to have definite evidence of such cases, as without this they are unable to take effective action on behalf of their members.

Members of the Institute, having any such particulars, are requested to write to the Secretary giving details.

R.I.B.A. ANNUAL DINNER, 1930.

The Annual Dinner will take place on Thursday, 15 May 1930, in the Guildhall, E.C. (by kind permission of the City Corporation). Full particulars will be issued to Members in due course.

THE ANNUAL CONFERENCE OF THE R.I.B.A. AND ALLIED SOCIETIES.

All members and students of the R.I.B.A. and all members of the Architectural Association and of the Allied Societies are cordially invited to attend the Conference to be held in Norwich from 18 to 21 June 1930 inclusive. Further particulars will be issued in due course.

MEMBERS' TOUR TO THE UNITED STATES AND CANADA.

In view of the success which attended the visit to the United States and Canada of a party of members of the R.I.B.A. last year, and as many members who were unable to avail themselves of that opportunity expressed a desire to undertake such a trip on a future occasion, it has been decided to organise a further party this year.

The numerous advantages to be gained by undertaking a visit to the United States and Canada from an architectural point of view will be obvious, particularly when the visit is made in company with fellow members of the Institute.

The suggested tour will include New York, Philadelphia, Washington, Detroit, Niagara Falls, Toronto, Ottawa and Montreal, and notes regarding the places of interest from an architectural standpoint, compiled by Mr. Percy E. Thomas, O.B.E., F.R.I.B.A., the leader of last year's party, will be available for members.

The duration of the trip will be approximately one month, and the cost, including cabin class accommodation on the Atlantic steamers, hotel accommodation in the United States and Canada, rail fares, etc., will be about £80. This amount is exclusive of meals ashore, gratuities, transfer of passengers and baggage between stations, steamers, hotels, etc., and sight-seeing trips.

The party will travel from Liverpool for New York by the Cunard Liner *Samaria* on 5 July, returning by the *Ascania* from Montreal to Plymouth and London on 25 July.

Relatives and friends of members will be welcomed.

Members interested are requested to apply to Mr. H. T. Leese, The Cunard Steamship Company, Ltd., 26-27, Cockspur Street, London, S.W.1, who will be pleased to forward a complete itinerary, etc. on request.

OVERSEAS APPOINTMENTS.

Members contemplating applying for appointments overseas are recommended to communicate with the Secretary R.I.B.A., who will supply them with any available information respecting conditions of employment, cost of living, climatic conditions, etc.

WILLIAM H. HAMLYN,
Hon. Sec. R.I.B.A., Salaried Members' Committee.

R.I.B.A. STATUTORY EXAMINATION FOR DISTRICT SURVEYOR AND THE EXAMINATION FOR BUILDING SURVEYOR.

The R.I.B.A. Statutory Examination for the Office of District Surveyor under the London Building Acts, and the Examination for Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on 7, 8 and 9 May 1930.

The closing date for receiving applications for admission to the Examinations, accompanied by the fee of £3 3s., is 16 April 1930.

Full particulars of the Examinations and application forms can be obtained from the Secretary R.I.B.A.

ELECTION OF MEMBERS, 7 APRIL, 1930.

An election of members will take place at the Business General Meeting to be held on Monday, 7 April. The names and addresses of the Candidates (with the names of their proposers) found by the Council to be eligible and qualified for membership according to the Charter and Bye-laws and recommended by them for election are as follows :—

AS HON. ASSOCIATES [2].

ALEXANDER : SIDNEY ARTHUR, M.A., Canon and Treasurer of St. Paul's Cathedral, 2 Amen Court, London, E.C.4. Proposed by the Council.

GOETZE : SIGISMUND CHRISTIAN HUBERT, Grove House, Regent's Park, N.W.8. Proposed by the Council.

AS HON. CORRESPONDING MEMBERS [2].

PONTREMOLI : EMMANUEL. President of the Société Centrale des Architectes Francais, Professor à l'école Supérieure des Beaux Arts à Paris. Inspecteur des Batiments et Palais Nationaux. Membre de l'Academie des Beaux Arts (Institut de France), 1 Rond Point, Bugeaud, XVIeme, Paris. Proposed by the Council.

SANO : DR. RIKI. Lecturer of Imperial University, Tokyo. President of the Japanese Institute of Architects, Dean of Technical College of Nihon University, Tokyo. 160 Kagomachi, Koishikawa-ku, Tokyo, Japan. Proposed by the Council.

AS FELLOWS [18].

BENSLYN : WILLIAM THOMAS, A.R.C.A. [*A.* 1911], 5 Lancaster Place, Strand, W.C.2 ; 17 Easy Row, Birmingham ; 12 Charlotte Road, Edgbaston, Birmingham. Proposed by Professor Beresford Pite, W. Alexander Harvey and C. E. Bateman.

BROWN : COLONEL JOHN, C.B., C.B.E., D.S.O., T.D., J.P., D.L. [*A.* 1921], 83 St. Giles Street, Northampton ; Harpole Grange, Northampton. Proposed by R. J. Williams, J. Alfred Gotch, and H. Norman.

BUTLER : CECIL GEORGE [*A.* 1921], Architects' Department, Temple Fortune House, Golders Green, N.W. ; 33A The Parade, Golders Green, N.W. ; 221 Hampstead Way, Golders Green, N.W.11. Proposed by W. E. Vernon Crompton, C. H. James, and D. Barclay Niven.

COBB : ROBERT STANLEY, M.C. [*A.* 1924]. P.O. Box 58, Nairobi, Kenya Colony. Proposed by E. J. Gosling, W. Harding Thompson, and Joseph Hill.

CULLEN : ALEXANDER, F.S.I., F.S.A. (Scot.) [*A.* 1920], 88 Cadzow Street, Hamilton, Scotland ; Invercoe, Uddingston, Lanarkshire. Proposed by John Keppie, Wm. B. Whitie, and Andrew Balfour.

HUGHES : HENRY CASTREE [*A.* 1921], Tunwell's Court, Trumpington Street, Cambridge ; Garner Cottages, Grantchester, Cambridge. Proposed by Sydney D. Kitson, H. H. Dunn, and Theodore Fyfe.

OWEN : REGINALD WYNN [*A.* 1901], Euston Station, London, N.W.1 ; Staceys, Harwoods Road, Watford, Herts. Proposed by the Council under By-law 3(d).

ROLLO : ROBERT LESLIE [*A.* 1920], Aberdeen School of Architecture, Robert Gordon's Colleges, Aberdeen ; 375 Union Street, Aberdeen ; Camloun, Cults, Aberdeen. Proposed by Robt. G. Wilson, junr., J. A. O. Allan, and George Watt.

SOMERVILLE : WILLIAM LYON [*A.* 1928], 2 Bloor Street West, Toronto ; 269 Oriele Parkway, Toronto. Proposed by V. D. Horsburgh, Henry Sproatt, and Ernest R. Rolph.

SURMAN : JOHN BURGESS [*A.* 1909], 17 Easy Row, Birmingham ; 45 Selwyn Road, Edgbaston, Birmingham. Proposed by W. Alexander Harvey, Edwin F. Reynolds and C. E. Bateman.

WOOD : WILLIAM WALTER [*A.* 1921], 8 Sussex Terrace, Plymouth ; Down Thomas, Plymouth. Proposed by Howard Robertson, H. S. Goodhart-Rendel and A. C. A. Norman.

WORTHINGTON : JOHN HUBERT, O.B.E., M.A., Hon. A.R.C.A. [*A.* 1912], 178 Oxford Road, Manchester ; The Pantiles, Alderley Edge, Cheshire. Proposed by Francis Jones, Walter Tapper and Sir Giles Gilbert Scott.

and the following Licentiates who have passed the qualifying Examination :—

CURREY : HAROLD WYNNE, F.S.I., 51 Catherine Street, Westminster, S.W.1. Proposed by W. Campbell Jones, Sydney Tatchell and Bernard Dicksee.

HOLMES : ARTHUR HERBERT, Tower Buildings, 99 High Street, Southend-on-Sea, Brick House Farm, Pitsea, Essex. Proposed by Sir Charles A. Nicholson, Henry W. Allardyce, and Percy G. Hayward.

KESTEVEN : LEOFRIC, Assistant Architect, Public Works Department, Selangor, Federated Malay States. Proposed by W. F. Hedges, O. F. Savege, and C. G. Boutcher.

ROBERTS : FREDERICK ANDREW, Earl Chambers, Mold, "Rusholme," Mold. Proposed by Gronwy R. Griffith, G. A. Humphreys, and Richard Hall.

and the following Licentiates who are qualified under Section IV, Clause 4 (c (ii)) of the Supplemental Charter of 1925 :—

CAMPBELL : WILLIAM, 6 Pall Mall, Hanley, Stoke-on-Trent, Victoria Road, Shelton, Stoke-on-Trent. Proposed by R. T. Longden, J. H. Beckett, and Elijah Jones.

SNOWDEN : THOMAS, County Buildings, Land of Green Ginger, Hull, 1 Salisbury Street, Hull. Proposed by J. Malcolm Dossor, G. Dudley Harbron, and Frederick J. Horth.

AS ASSOCIATES [43].

BOON : GEOFFREY MAURICE [Final], "Nashdom," Hope Road, Prestwich, Manchester. Proposed by J. Theo. Halliday, Paul Ogden, and John Swarbrick.

BRADBURY : RONALD, B.A. Hons. (Arch.), Manchester. (Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination after passing Examination in Professional Practice), Taxal Gate, Whaley Bridge, Stockport. Proposed by Francis Jones, J. Theo. Halliday, and Percy S. Worthington.

BRENCHLEY : ARTHUR REGINALD [Final], "Cumshaw," Trinity Road, Gillingham, Kent. Proposed by Professor A. E. Richardson, G. Topham Forrest, and Alexander G. Bond.

BRENTNALL : RALPH HERBERT [Final], 28 Victoria Park, Fishponds, Bristol. Proposed by Sir George H. Oatley, G. C. Lawrence, and G. D. Gordon Hake.

BRIGHT : GEORGE EDWARD [Final], 49 Hilldrop Road, Tufnell Park, London, N. Proposed by Professor A. E. Richardson, Sir Edwin L. Lutyens, and Albert J. Thomas.

BROWN : COLLINGS WILLIAM [Special], Public Works Department, Union Buildings, Pretoria, South Africa. Proposed by J. S. Cleland, J. Lockwood Hall, and J. G. H. Holdgate.

BUTLER : RONALD MCCONNAL (Passed five years' joint course at the Birmingham School of Architecture and the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice). Redclyffe, Halesowen, nr. Birmingham. Proposed by Howard Robertson, Gilbert H. Jenkins, and the Council.

CARTER : EDWARD JULIAN, B.A. Cantab (Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice), 4 Oakley Street, Chelsea, S.W.3. Proposed by Howard Robertson, Charles Sydney Spooner, and A. H. Moberly.

CASSELLS : GEORGE ARTHUR (Passed five years' course at the Edinburgh College of Art. Exempted from Final Examination after passing Examination in Professional Practice), 1, Corstorphine Park Gardens, Corstorphine, Midlothian. Proposed by Jn. Begg, E. A. Jamieson, and James A. Arnott.

CHAPLIN : JOHN PERCIVAL [Final], 22 Weaponness Valley Road, Scarborough. Proposed by J. Henry Pitt, G. Dudley Harbron and Alexander G. Bond.

DOWER : JOHN GORDON, B.A. Cantab. [Final], 66 Willifield Way, London, N.W.11. Proposed by C. Cowles-Voysey, Professor Beresford Pite, and H. S. Chorley.

DUFFY : THOMAS [Special], 46 Third Avenue, Heaton, Bolton. Proposed by S. Wilkinson, John B. Gass, and Arthur J. Hope.

FLETCHER : JANET (Miss) (Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice), 52, Campden Hill Square, London, W.8. Proposed by Henry M. Fletcher, Howard Robertson, and J. Murray Easton.

GRAYSON : ARTHUR BELLHAM (Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice), The Manse, Halesworth, Suffolk. Proposed by Niel Martin-Kaye, Howard Robertson, and Robert Atkinson.

HASKINS : ALLAN DANIEL AITKEN [Final], 16 Sampson Road, Sparkbrook, Birmingham. Proposed by Philip B. Chatwin, Ernest C. Bewlay, and F. Barry Peacock.

HUGHES : JOHN LESLIE, Dip. Arch. (Liverpool). (Passed five-years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination after passing Examination in Professional Practice), 5 Edge Lane, Edge Hill, Liverpool. Proposed by Professor C. H. Reilly, Leonard Barnish, and T. Taliesin Rees.

JOHNSON : ALLAN, Dip. Arch. (Leeds) [Final], c/o 106 Hendon Way, Cricklewood, N.W.2. Proposed by H. V. Lanchester, T. A. Lodge and Victor Bain.

KEMP : SIDNEY JAMES, M.M. [Final], Tilehurst, Farley Road, Selsdon, South Croydon. Proposed by Maxwell Ayrton, Professor A. E. Richardson, and Charles D. Hawley.

KININMONTH : WILLIAM HARDIE [Passed five years' course at the Edinburgh College of Art. Exempted from Final Examination after passing Examination in Professional Practice], Camborne Hotel, 62 Leinster Square, London, W.2. Proposed by Jn. Begg, C. D. Carus-Wilson, and F. C. Mears.

MACDONALD : HUGH SINCLAIR (Passed five years' course at the Edinburgh College of Art. Exempted from Final Examination after passing Examination in Professional Practice], The Rowans, Princes Street, Thurso, Caithness. Proposed by Jn. Begg, C. D. Carus-Wilson, and F. C. Mears.

MCMULLEN : ALEXANDER LAWRENCE, B.A. Cantab. [Final], 32 Evelyn Mansions, Carlisle Place, S.W.1. Proposed by J. Murray Easton, E. Stanley Hall, and Howard Robertson.

MARTIN : JOHN LESLIE (Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination after passing Examination in Professional Practice), Holmleigh, Bramhall Lane, Bramhall, Cheshire. Proposed by J. Theo. Halliday, Francis Jones, and John Swarbrick.

MAYNARD : FREDERICK JAMES [Final], 158 Pinner Road, Harrow, Middlesex. Proposed by Gilbert H. Jenkins, W. E. Riley and M. H. Baillie Scott.

MURRAY : JAMES MACKIE (Passed five years' course at the Edinburgh College of Art. Exempted from Final Examination after passing Examination in Professional Practice), 5 Dick Place, Edinburgh. Proposed by Jn. Begg, F. C. Mears and C. D. Carus-Wilson.

NEIL : CHARLES WARREN [Final], "Langley," 14 Valkyrie Road, Westcliff-on-Sea, Essex. Proposed by Niel Martin-Kaye, Herbert R. Cowley and W. Beswick.

NISBET : JOHN ATHELSTAN VICTOR, B. Arch. Sydney (Passed five years' course at Sydney University School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), c/o The National Bank of Australasia, Ltd., 7 Lothbury, E.C.2. Proposed by Major Hubert C. Corlette, J. A. Gotch and T. J. Rushton.

PATKER : VITHAL MUKUND (Passed five years' course at the University of London School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), 27 Narcissus Road, N.W.6. Proposed by Professor A. E. Richardson, C. Lovett Gill and Arthur Stratton.

PHILLIPSON : BEATRIX JANET (Miss), B.A. London (Passed five years' course at the University of London School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), College House, Dollis Avenue, Finchley, N.3. Proposed by Professor A. E. Richardson, Stanley C. Ramsey and Matthew J. Dawson.

PRICE : GEOFFREY LANGFORD [Final], 15 Harley Terrace, Gosforth, Newcastle-on-Tyne. Proposed by Percy Thomas, Harry Teather and T. Alwyn Lloyd.

RANDALL : GERALD FRAYNE, B.A. Eng. Camb. (Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice), Westmoor, Tillington, Petworth, Sussex. Proposed by Howard Robertson, J. Murray Easton and Robert Atkinson.

REA : HERBERT FRANCIS [Final], Lakemead, Totnes, Devon. Proposed by Fred. Harrild, Professor S. D. Adshead and Stanley C. Ramsey.

SEGAR-OWEN : GODFREY JOSCELYN SEGAR [Final], Palmyra Square Chambers, Warrington, Cheshire. Proposed by Geoffrey Owen, W. Curtis Green and Professor C. H. Reilly.

SHAW : ROBERT [Final], Main Street, Cottingley, Bingley, Yorkshire. Proposed by G. H. Foggitt, B. R. Gribbon and Colonel Albert E. Kirk.

SHEPHERD : GEORGE HENRY [Final], c/o 31 Stubley Road, Heckmondwike. Proposed by G. H. Foggitt, B. R. Gribbon and Colonel Albert E. Kirk.

SMEED : CHARLES WILLIAM JAMES (Passed five years' course at the University of London School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), Electric House, Station Road, Chingford, London, E.4. Proposed by Professor A. E. Richardson, Arthur Stratton and Matthew J. Dawson.

SOMAKE : ELLIS EDWARD (Passed five years' course at the University of London School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), 17 Hendon Way, Cricklewood, N.W.2. Proposed by Professor A. E. Richardson, Thos. S. Tait and Sir John J. Burnet.

STANLEY : LESLIE STUART, M.A. Cantab. [Special], 16 Cole Park Road, Twickenham, Middlesex. Proposed by Professor A. E. Richardson, Arthur Stratton and Major Charles F. Skipper.

STEELE : FRANK REGINALD [Final], "Newlands," Stockton Brook, Stoke-on-Trent. Proposed by R. T. Longden, J. H. Beckett and Elijah Jones.

TASSELL : GEORGE EDWARD [Final], "Almaville," Tillington Stafford. Proposed by E. Bower Norris, J. Theo. Halliday and W. H. Hobday.

TAYLOR : GEORGE SWAN [Special], 35 Comely Bank Road, Edinburgh. Proposed by Sir G. Washington Browne, T. F. Maclennan and Geo. D. Macniven.

WESTERMAN : ALBERT EDWIN (Passed five years' course at the Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice), 88 St. James's Avenue, Beckenham, Kent. Prosposed by A. S. R. Ley, Howard Robertson and J. Murray Easton.

WHEELER-CARMICHAEL : SAMUEL DENNIS (Passed five years' course at the University of London School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice), 22 Portman Street, W.1. Proposed by E. B. Hoare, M. Wheeler and W. Courtenay le Maitre.

YOUNG : WILLIAM EDWARD [Special], 16 Leyburn Road, Moston Estate, Failsworth, Manchester. Proposed by A. Nelson Bromley, Harry G. Watkins and Paul Ogden.

Queries and Replies

[A large number of questions on points of professional practice and technical interest are addressed to the Practice and Science Standing Committees and to other Committees of the Institute.

The Council, on the recommendation of the Science Standing Committee, have decided to adopt the procedure of publishing such queries in the JOURNAL when on matters of general interest, together with the replies of those members who, having special knowledge and experience of the particular questions, have been asked to express their opinions upon them. The scheme is based upon that adopted by the Surveyors' Institution.

The identity of the member seeking the information will not be disclosed, but the replies published will be signed by the members who have supplied them.]

Query No. 5.

Can you give me a formula for a durable whitewash for external use ?

Reply to Query No. 5.

The Bureau of Lighthouses, Department of Commerce, Washington, issues a document which describes what is generally known as Government Formula for Whitewash.

A verbatim transcript is as follows :—

The following formula for whitewashing has been found to answer on wood, brick and stone, nearly as well as oil paint and is much cheaper : Slake half a bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt dissolved in warm water ; 3 lb. of ground rice put in boiling water and boiled to a thin paste ; half a pound of powdered Spanish whiting, and a pound of clear glue dissolved in warm water, mix these well together, and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace and when used put it on as hot as possible with painters' or whitewash brushes.

The following simpler formula for mixing whitewash when properly made and put on gives a white that does not easily wash or rub off, viz., To 10 parts of best freshly slaked lime add one part of best hydraulic cement ; mix well with salt water and apply quite thin.

G. N. KENT [*L.*].

At the request of several members, copies of the questions and answers are now printed as separate leaflets and can be obtained free on application to the Secretary.

Competitions

ACCRINGTON : NEW POLICE AND FIRE STATIONS

The Accrington Corporation invite architects to submit, in open competition, designs for new Police and Fire Stations.

Assessor : Mr. Herbert J. Rowse [*F.*].

Premiums : £250, £150 and £100.

Last day for receiving designs, 31 March 1930. Conditions of the competition may be obtained on application to the Town Clerk, Town Hall, Accrington. Deposit £2 2s.

CHELMSFORD : PUBLIC LIBRARY AND MUSEUM.

The Chelmsford Corporation invite architects to submit, in open competition, designs for a New Public Library and Museum.

Assessor : Mr. H. V. Lanchester [*F.*].

Last day for receiving designs, 14 June 1930.

Conditions of the Competition may be obtained on application to Mr. G. E. Barford, Town Clerk, Town Clerk's Office, Chelmsford. Deposit £1 1s.

CLYDEBANK : WAR MEMORIAL.

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the Promoters in the hope of securing an amendment. In the meantime Members should not take part in the competition.

LIVERPOOL: PROPOSED PIER HEAD IMPROVEMENTS.

The Liverpool City Council propose to offer premiums of 1,000 guineas and 500 guineas in connection with a competition for the improvement of the amenities of the Pier Head. [Conditions are not yet available.]

WEST HARTLEPOOL: OPEN AIR SCHOOL.

The West Hartlepool Education Committee have decided to hold a competition for an open air school, for which Mr. F. Willey, the County Architect, will be the Assessor. [Conditions are not yet available.]

Members' Column

MR. J. ARCHIBALD LUCAS.

MR. J. ARCHIBALD LUCAS, F.S.I., F.R.I.B.A., Architect and Surveyor, of Guildhall Chambers, High Street, Exeter, has taken into partnership Mr. Douglas Charles Langford, F.S.I., of "Gwithian," Broad Lane, Bracknell, Berks. The style of the new firm will be "Lucas & Langford."

PARTNERSHIP OR PRACTICE WANTED.

YOUNG Architect with general experience is willing to consider purchasing an architectural practice or partnership. Must be in London area.—Apply Box 3330, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENT OF DEPUTY COUNTY ARCHITECT FOR KENT.

The Kent County Council on 19 February 1930, appointed Mr. Sidney H. Loweth, A.R.I.B.A., M.R.San.I., Deputy County Architect.

TO LET.

ARCHITECT'S OFFICES to be let by Member [*F.*]. One large room, one smaller with waiting lobby and various cupboards, forming self-contained suite; good position and light; resident housekeeper; adjoining Bedford Row, W.C.1. Rent £100 per annum, inclusive rates.—Apply Box 5330, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ARCHITECTURAL BOOKS.

FOR disposal privately by the widow of an architect [*F.*], recently deceased, a number of books upon Architecture and the Arts (some rare), also some office furniture. Inspection London any time.—Apply Box 4330, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes X

SESSION 1929–1930.

At the Ninth General Meeting (Ordinary) of the Session, 1929–1930, held on Monday, 3 March 1930, at 8 p.m.

Sir Banister Fletcher, F.S.A., President, in the Chair.

The attendance book was signed by 24 Fellows (including 7 members of Council), 29 Associates (including 3 members of Council), 5 Licentiates (including 1 member of Council), 1 Hon. Associate and a large number of visitors.

The Minutes of the Ordinary General Meeting held on 17 February 1930, having been published in the JOURNAL, were taken as read, confirmed, and signed as correct.

The Hon. Secretary announced the decease of:—

Charles H. Moore, Professor of Art and Director of the Fogg Art Museum of Harvard University, elected an Hon. Associate 1910;

William Samuel Alfred Emden, transferred to Fellowship Class 1925;

Edward Percy Thompson, elected Associate 1882;

John Stalker, transferred to Licentiate Class 1925;

and it was Resolved that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following member attending for the first time since his election was formally admitted by the President:—

Mr. Hugo R. Bird [*F.*].

The Secretary announced that the Council had nominated for election to the various classes of membership the candidates whose names are published in this issue of the JOURNAL.

The Chairman announced that by a resolution of the Council the following had ceased to be a member of the Royal Institute:—

As Associate

Cyril John Crossman.

Mr. Frank Pick having read a paper on "The Design of Modern Railway Stations in Europe and America,"* a discussion ensued, and on the motion of the Rt. Hon. Lord Aberconway, P.C., seconded by Sir H. A. Walker, K.C.B., a vote of thanks was passed to Mr. Frank Pick by acclamation and was briefly responded to.

The proceedings closed at 9.45 p.m.

* *This Paper will be published in the next issue of the* JOURNAL, *22 March.*

ARCHITECTS' BENEVOLENT SOCIETY

(Insurance Department).

HOUSE PURCHASE SCHEME

(for property in Great Britain only).

The Society is able, through the services of a leading Assurance Office, to assist an Architect (or his client) in securing the capital for the purchase of a house for his own occupation, on the following terms:—

AMOUNT OF LOAN.

Property value exceeding £666, but not exceeding £2,500, 75 per cent. of the value.

Property value exceeding £2,500, but not exceeding £4,500, 66⅔ per cent. of the value.

The value of the property is that certified by the Surveyor employed by the Office.

RATE OF INTEREST, 5½ per cent. gross.

REPAYMENT.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years, or at the *earlier death* of the borrower.

SPECIAL CONCESSION TO ARCHITECTS.

In the case of houses in course of erection, it has been arranged that, provided the Plan and Specification have been approved by the Surveyor acting for the Office, and the amount of the loan agreed upon, and subject to the house being completed in accordance therewith, ONE HALF of the loan will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in.

NOTE.—In 1928, over £20,000 was loaned to architects under this scheme, and as a result over £100 was handed to the Benevolent Fund.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary Architects' Benevolent Society, 9 Conduit Street, London, W.

R.I.B.A. JOURNAL.

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